

Appendix A.

- Northwest Fisheries Science Center West Coast Groundfish Observer Program Initial Data Report and Summary Analyses, January 2003.
- Northwest Fisheries Science Center West Coast Groundfish Observer Program Data Report and Summary Analyses, January 2004.
- Northwest Fisheries Science Center West Coast Groundfish Observer Program Data Report and Summary Analyses For 2001-2003 Coverage of Sablefish-Endorsed Fixed Gear Permits, February 2004.

**NORTHWEST FISHERIES SCIENCE CENTER
WEST COAST GROUND FISH OBSERVER PROGRAM
INITIAL DATA REPORT AND SUMMARY ANALYSES**

January 2003

Introduction

Goals of this Report.

This report is the initial compilation of 2002 data report gathered from a recently established section of the West Coast Groundfish Observer Program (WCGOP). This new section of the observer program collects data onboard the west coast groundfish fleet (excluding the at-sea and shoreside whiting fleet.¹) The program's goal is to collect information on the discard² of west coast groundfish to be used in assessing the total fishing mortality of a variety of groundfish species. This report includes preliminary data from the first year of observations of the trawl fleet. This report also includes some initial analyses of the information. More detailed analyses will be included in subsequent reports; these analyses will be facilitated by the availability of the 2002 logbook information.

The West Coast Groundfish Fishery

The groundfish fishery off the west coast of the United States is executed from the Canadian to Mexican borders. Multiple vessel types participate in this fishery. They range in size from 8' kayaks to 120' trawlers and fish in nearshore to offshore waters. The vessels use various types of gear including bottom trawls, midwater trawls, pots, longlines and other hook and line gear to catch over 80 species of marketable fish. Trawlers take the majority of groundfish. The catch can be incredibly diverse in species and fish size and overall catch size can vary widely as well. In many cases, a portion of the catch is retained and another portion of the catch, that may be of the wrong size,

¹ The at-sea Pacific whiting fleet is monitored by another section of the WCGOP. The shoreside Pacific whiting fleet retains all catch and that catch is monitored by state port samplers.

² In some cases the terms bycatch and discard have been used imprecisely. These terms are not interchangeable. Bycatch is defined as the total amount of unintended catch. Discard is defined as the amount of unintended catch, which is not retained on a vessel.

species, or is over management quota limits, is discarded at sea.

Active management of the fishery began in the early 1980's with the establishment of numerical Optimal Yields (OY's) for several managed species and trip limits for widow rockfish, the *Sebastes* complex, and sablefish. The objective of trip limits was to slow the pace of landings to maintain year-round fishing, processing, and marketing opportunities. Since the 1980's, management regulations generally have evolved to the use of cumulative 2-month catch limits.

Fisheries managers use state-issued sales receipts (fish tickets) and vessel logbooks to monitor catch. Fish ticket and vessel logbook data are transferred to the Pacific Fisheries Information Network (PacFIN) by state fisheries agencies in Washington, Oregon and California. The fish tickets are useful in tracking the pace of the fishery throughout the year. Trip limit quotas may be changed at any point based on this information. In order to comply with yearly total allowable catch limits (TAC's), managers also need information on the rate of discard of each species. One of the best ways to accurately estimate the amount of discarded catch is by at-sea observer programs.

Prior Studies of Bycatch in the West Coast Groundfish Fishery

During 1985-1987, a voluntary observer program was conducted primarily off Oregon (Pikitch et al. 1988; Pikitch, 1991). The total discard from all causes was determined to be from 16% to 20% of the total catch for species that were regulated by a trip limit. The same level of discard was assumed to be applicable during the 1990's even though the actual level of discard may have changed due to more restrictive but restructured trip limits. A second voluntary observer program was conducted during 1988-1990, which primarily assessed the impact of potential changes in codend mesh-size and shape in the west coast groundfish trawl fishery (Bergh et al., 1990). Pikitch et al. (1998) applied the data collected from these two observer programs to estimate bycatch of Pacific halibut and salmon in groundfish and shrimp trawl fisheries.

During 1995-1999, Oregon Department of Fish and Wildlife (ODF&W) administered the

Enhanced Data Collection Project (EDCP). The primary goal of the EDCP was to collect data on discard rates for groundfish species and to determine bycatch rates for prohibited species (salmon and Pacific halibut). Methot et al. (2000) used the data to estimate discard of sablefish, dover sole, and thornyheads. Wallace and Methot (2002) also applied the data to estimate Pacific halibut bycatch mortality in IPHC Area 2A. Sampson (2002) applied the data to estimate average discard rates for the major species and determine the factors contributing to variability of discard rates.

Methods

West Coast Groundfish Observer Program

On May 24, 2001, NOAA Fisheries (NMFS) established the West Coast Groundfish Observer Program (WCGOP) to implement the Pacific Coast Groundfish Fishery Management Plan (50 CFR Part 660). This regulation requires all vessels that participate in the groundfish fishery to carry an observer when notified to do so by NOAA Fisheries (NMFS) or its designated agent. The observer program's goal is to improve estimates of total catch and discard. In the first phase of the program approximately 20 observers were deployed. Subsequently, with an increase in resources designated for the program, the number of observers was increased to as many as 40. These observers are stationed along the coast from Bellingham, WA to Santa Barbara, CA.

Vessel Selection Process

The initial sampling strategy for the West Coast Groundfish Observer Program aimed at providing, in the first year, observation of 10% of the coastwide landings (as reported in fish tickets) of the limited entry trawl fleet. An additional goal was to provide pilot observer coverage in the limited entry fixed gear sablefish and rockfish fisheries (Observer coverage plan: www.nwfsc.noaa.gov/fram/observer). Ports along the west coast were aggregated into "port groups". Limited entry permits in each port group were randomized and sequentially selected for observation for an entire two-month cumulative trip limit period. This selection process was designed to produce a reasonably proportional distribution of observations along the coast. Based on this design, it was

estimated that the observer program would cycle through the limited entry trawl fleet every two years.

In addition to the selection of trawl permits, some limited entry fixed gear permits initially were selected the same way. However, fixed gear permits are now selected for the entire sablefish season to ensure that the total quota fished on each selected permit is observed. The program now expects to cover all the limited entry fixed gear vessels within four years (2001-2004).

Selected permit owners receive written notification from the NOAA Fisheries (NMFS) about two-months prior to the beginning of observation period. Observer program staff then determines the vessel's intention to fish groundfish, confirm their primary port, and assign an observer to the vessel. During a preboarding meeting, the observer confirms that the mandatory safety gear is aboard, addresses any concerns of the vessel crew and captain and makes arrangements for sampling and berth space. Vessels are required to inform NOAA Fisheries (NMFS) or its designated agent 24 hours prior to the beginning of each fishing trip during the period to be observed.

Vessels that indicate that they do not plan to fish groundfish in the selected period are placed in a holding category. However, these vessels are required to notify NOAA Fisheries (NMFS) when they next plan to fish groundfish. In addition, vessels that are selected but do not get covered during a trip limit period are carried over to the next trip limit period. These vessels are then observed during next period in which they fish.

General Data Collections

The fisheries observers are trained professionals who monitor and record catch data on commercial fishing vessels, following the protocols in the West Coast Groundfish Observer Program Manual (NMFS, NWFSC, 2002, unpublished report). The data collected by the observers include:

- Start time, end time and location of tow/set
- Gear type and fishing strategy

- Estimated total catch weight (including tows/sets for which there is 100% discard)
- Weight of discard by catch category
- Reason for discard by catch category or species
- Species composition of discard by catch category
- Weight of fish retained by catch category
- Species composition of retained by catch category
- Document catch of prohibited species and incidental take of protected species
- Size composition, tags, and viability assessments for Pacific halibut
- Size composition of discarded fish (from randomly selected categories)
- Size composition of retained fish (from randomly selected categories)
- Basic taxonomic composition of non-fish bycatch
- Special biological collections (otoliths, maturity, food habits, genetic samples, etc.)

At-Sea Observations - Sampling on Trawlers

For each tow, the priorities of sampling are:

1. Prohibited species sampling
2. Estimate total catch weight
3. Estimate total discard weight
4. Species composition of discarded rockfish species
5. Species composition of all other discarded species
6. Species composition of retained species in mixed catch categories

These data are recorded on (1) Observer Haul Form (Appendix A), (2) Haul Deck Form (Appendix B), (3) Discarded Species Composition Deck Form (Appendix C), (4) Retained Species Composition Deck Form (Appendix D), and (4) Trip Discard Form (Appendix E).

a. Fishing effort data

To obtain fishing effort data on limited entry trawlers we obtain from the vessel's logbook the following: vessel name, US Coast Guard number, GF permit number, fish-ticket identification (i.e., FTID in PacFIN database), logbook identification (TRIP_ID in PacFIN database), date, time, and position (latitude and longitude), average depth of gear

deployment and retrieval, target strategy (Appendix Table I), and gear code (Appendix F). Observed trip data can be linked to sales records and management areas using US Coast Guard number, GF permit number, fish-ticket identification, and logbook identification.

Differences exist in the gear codes used by the WCGOP and those used in the state logbook data. Target strategies used by the WCGOP are listed in Appendix Table I and gear codes used are listed in Appendix F.

Limited entry fixed-gear vessels and open access vessels are not required to keep logbooks. Observers use captains' personal logs, vessel instruments (GPS, depth locators), and/or handheld GPS units to collect fishing operation information on these vessels.

b. Observed total catch

The methods of estimating the observed total catch (OTC) of a haul, listed preferentially, are: actual weight, volumetric estimate, visual estimate, retained + discarded weights, and vessel estimate. Observers follow these general rules when deciding which method to use:

1. If a catch is approximately 500 lbs or less and the species composition is relatively homogeneous, then actual weights are used.
2. If a catch is large and/or diverse, volumetric estimates are used. Volumetric estimates are made by taking length, width, and/or height measurements of a codend or trawl alley/bin to estimate total volume (m^3) of the total catch. A density measurement is obtained from a minimum of two baskets (with a predetermined volume) of randomly selected, unsorted catch. The estimated total catch weight (lbs) is the product of the volume (m^3) and the density (lbs/m^3).

There are two types of volumetric estimates:

- 2.1. Bin/Trawl Alley Estimate - Used when the catch is dumped into a trawl alley or other measurable area.
- 2.2. Codend estimate - Used when the full codend is not dumped into a trawl alley or other measurable area.
3. If actual weights and volumetric estimates are impossible, visual estimates are used

for OTC. Visual estimates are taken for every haul and recorded on the back of Observer Haul Form. The information can be used to check and compare the accuracy of visual estimates.

4. If basket density samples cannot be taken and if actual weight and visual estimate cannot be processed, then retained + discarded weights is used.
5. If none of the above methods can be utilized, then the vessel's estimate or haul weight is used.

c. Composition sampling

There are two steps in sampling for composition of the catch. The first step is estimating the weight of each catch category in the haul. During the second step species composition samples of some or all of the catch categories are taken.

i. Catch Category Sampling

Observers begin sampling once the crew has sorted the catch into retained and discarded fish. The crew separates the retained catch into catch categories while the observer sorts the discarded catch into catch categories. A catch category can be a single species or a mix of several species. Catch categories are determined by weight method, sorting method, and/or species composition. To ensure compatibility with landed catch information, observers record catch categories in PacFIN SPID complex codes. The weight methods for estimating catch categories are:

1. Actual Weight - If a catch category is less than 500 lbs and the total discard is less than 1000 lbs, actual weights are used. This is the preferred method and observers are encouraged to use it whenever possible.
2. Basket Volume Determination (BVD) - If a catch category can be put into baskets and thrown over, this method can be used. The observer places all of the catch in baskets before discarding. Randomly selected baskets are kept for average weight of baskets determination and species composition.
3. Bin/Trawl Alley Estimates - If a catch category is held in a bin or other measurable area, bin/trawl alley estimates are used. Observers measure the length, width, and height of the area to find the volume (m^3). Then, they take a minimum two basket

density (lbs/m³) sample of the unsorted catch category. The volume is multiplied by the density to obtain an estimate of the catch category weight.

4. Visual Estimate - If an observer is unable to use one of the previous methods to estimate a catch category weight, this method is used. There are three ways to produce a visual estimate.
 - a. Visually estimate the number of baskets it would take to hold the entire catch category. Multiply this number by an average basket weight to determine the weight of the catch category. Average basket weights are determined by weighing four or more baskets filled with unsorted catch from the catch category.
 - b. Use temporal or spatial sampling frames. Temporal frames are used when an observer can estimate the total time it took to sort retained from discarded for a haul. Observers randomly select time units to take samples from and multiply the weight of the sample/time it took to take sample by the total time to sort. Spatial frames are used when as observer can estimate the proportion of area that the sample was taken from. They randomly select a proportion of the catch category to take a sample form. Then, they multiply the weight of the sample by the proportion to achieve a total catch category weight.
 - c. Past experience. If the previous methods cannot be used, observer will do a visual estimate of the total weight of the catch category based on previous samples taken.
5. OTC - Retained - This method is used when none of the previous methods is possible. This is value is found by subtracting the summed total of retained catch categories from the overall total catch determined by the observer.
6. Vessel Estimates - Observers only use vessel estimates for the estimates of retained catch categories.

ii. Species Composition Sampling

Once the catch is sorted into catch categories, single or multiple basket species composition samples are taken. The priorities for species composition sampling are catch categories that contain:

1. Prohibited species: Pacific halibut, salmon species, Dungeness crab (north of Point

Arena.)

2. Discarded rockfish species
3. Species that are both retained and discarded.
4. All other discarded species.
5. Retained mixed rockfish.

d. Reason for Discard

Observers document the reason for discard based on reasons provided by the captain or crew for catch categories and/or species. The reasons for discard are categorized as 'prohibited', 'size', 'market', 'regulation', and 'other'.

e. Complications

Vessel size, catch size, and duration of hauls vary greatly along the West Coast. Because of these variations, observers require a number of options to complete the required sampling. Below is a brief description on how these factors influence sampling:

Vessel Size - Trawlers on the West coast range in size from 40 feet to 100 feet, with an average of 60 feet. The crews of these vessels usually use most of the deck space for retained species and sorting, leaving limited space for the observer to store and sort their sample.

Catch Size - Catch weight varies greatly, depending on vessel size and also target strategy. Large hauls may fill the entire deck, leaving little sampling space while small hauls may be sorted quickly and another catch brought up soon afterwards.

Duration of hauls - The amount of time between hauls as well as the number of hauls per day greatly influence sampling. As an example, when vessel hauls are of short duration, the observer must be conscious of finishing the previous sampling before the next haul is brought aboard. Observers must evaluate each vessel and devise a strategy that will allow them to take the largest sample size possible given the complicating factors. Many times, a small vessel will have a large tow or a small vessel will haul frequently, further complicating matters.

Revisions to Sampling and Collection Protocols

The West Coast Groundfish Observer Program held a workshop in July 2002. The purpose of the workshop was to review sampling protocols and obtain expert advice on the types of analyses that could be conducted with the data. Based on recommendations from this workshop, sampling protocols and training procedures were revised to ensure more consistency among the observer sampling methods. Also, during the first year of data collection, the most common method for estimating discard catch category weight was OTC (Observer Total Catch) - Retained. Observers are now encouraged to only use OTC - Retained when they are unable to sample the catch. Visual estimates are now the most common method for estimating catch category weights.

Data Flow

The fourteen steps of data processing prior to analysis are detailed below.

1. Data are collected at-sea by the observer following the protocols in the West Coast Groundfish Observer Program Manual (NMFS, NWFSC unpublished report).
2. Data are entered into the database system.
 - a. During 2001-2002, the WCGOP used an onboard application, which included a Visual Basic graphical user interface. Observers used this to enter data into a Microsoft Access database located on laptop computers. Trip information contained in these Access databases is written to a file and transmitted via email as needed to a central data system located at the Northwest Fisheries Science Center (NWFSC).
3. Data aggregated in Oracle database.
 - a. The central data system receives the trip data files and loads them into an Oracle database. Data within the Oracle database are then accessible via a web-based graphical user interface or by direct SQL queries from the database. For a list of data tables, see appendix G.
4. Quality Control (QC) of calculations and sampling methods.
 - a. A debriefer or lead observer checks all computations made by the observer and reviews form to ensure that it is complete and that appropriate sampling methods were used.

5. Debriefing

- a. Observers debrief after every two-month cumulative trip limit period.

Debriefing includes:

- i. Vessel Data - Observers complete a vessel survey for each vessel that explains vessel set-up and basic sampling methodologies.
- ii. Logbook Review - Observers keep logbooks detailing the events of each trip, basic deck schematics, sampling methods used, communication logs, and confirmation of a current safety decal. Any hauls during which sampling problems occurred are documented in the logbook and reviewed during debriefing.
- iii. Data Correction - Observer corrects all calculations and errors in data forms.
- iv. Evaluation - Observers are evaluated on their performance.

6. Data checked and updated in database program.

- a. Electronic data is compared to raw data to check for keypunch errors. Also, all corrections discovered during debriefing are updated in the database program.

7. Quality Control (QC) Queries

- a. Queries are run to detect any data that do not fall within specified ranges or other inconsistencies.

8. Data updated in database system

- a. The raw data of all entries that are pulled by the QC queries are reviewed and the electronic data is updated.

9. Volume estimate updated

- a. Volumetric estimates are updated using a correction factor. Step 9 is necessary for all data collected from September 2001 - October 2002 due to correct the value used for the standard basket volume.

10. Data released to analyst team.

- a. At this point, data are considered complete and ready for analysis.

11. Analyst(s) retrieve data from database and consolidate.

- a. Data from the oracle database's vessel, trip, catch, and species composition

data tables are linked to form a new working file. The following information is included in each table:

- i. Vessel - USCG identification number
- ii. Trip - Start and end dates, start and end times, start and end latitudes and longitudes, depth, gear type, gear performance, total catch estimates, and weight method of total catch estimates.
- iii. Catch - PacFin catch category based estimates of fish caught in each haul or set.
- iv. Species Composition - Weights and counts of individual species occurring in the subsample.

12. Data Expansion

- a. Because of the sampling procedure that derives the species composition, a tow-level expansion is needed to estimate the total amount retained and discarded of each species in the catch. Depending on the composition of a catch category, an observer may take a subsample from it, say j . Let y_j denote the total weight of the category j and x_{ij} denote observed weight of the species i in the category. The sampling ratio (R_j) for this category is

$$R_j = \left(\sum_i x_{ij} \right) / y_j$$

The tow-level expanded weight of the species i in the category j is

$$X_{ij} = x_{ij} / R_j$$

- b. Tallying of X_{ij} of the species i across all categories j 's within a tow would give the total landings of the species retained or discarded.

13. Observer Data merged with vessel logbooks and fish tickets.

- a. Fish Tickets are trip-aggregated sales receipts for marketable species/categories. They are used as the basis for catch monitoring and stock assessment. Fish ticket information is loaded into the PacFIN database monthly and is subject to update frequently thereafter. Observer

data is linked to fish tickets by either direct fish ticket number(s) obtained by the observer or by comparing the return date recorded by the observer with the dates of fish tickets from the vessel. One complicating factor is that some trips have multiple fish tickets.

- b. Vessel logbooks are only required in the limited entry trawl fishery. The logbooks contain tow-level information and the hailed weight (skipper estimated weight) of retained species/categories. The three state agencies have individually developed an adjusting procedure to reconcile the differences between fish tickets and logbook landings (Sampson and Crone, 1997). Attention should be paid when interpreting logbook data because the reconciliation may result occasional large differences between the hailed weight and adjusted weight for a species/category. The logbook data are not entered by all states into the data system until several months after the end of the calendar year. Therefore, at present, complete logbook data are only available for 2001. In addition, some fishers do not submit their logbooks to the state. The missing logbooks make it difficult to complete full statistical analyses. Vessel logbooks are linked to observer data through fish tickets.

14. Stratification of Data

- a. Ideally, the observer data is a set of samples from a population defined by fish tickets and/or by logbooks although the sampling frame of the population can only be defined as the fishing season progresses. The temporal and spatial distributions of groundfish species associated with complex environmental conditions and the temporal changes of fisheries management are characteristic of the west coast groundfish fisheries. To address this consideration, the data need to be stratified into likely homogeneous components in order to obtain a minimum-variance estimate of parameters of interest. Due to the mobility of the fleet, treating a trip as a sampling unit would make it difficult to address the temporal and spatial

operation of the fishing industry. Therefore, individual tows are used to define sampling units. A finer stratification would lead to almost-homogeneous strata but leave an insufficient number of samples in the individual strata. Therefore, the following stratifications were used for these analyses.

Target strategy: Tows are classified as: (1) Pacific whiting, (2) DTS (Dover sole, thornyheads and sablefish), (3) Shelf rockfish, (4) Slope rockfish and (5) Flatfish according to the predominate catch in each tow. These categories are assumed to approximate the intended target strategy of the fisher when making the tow. The species/categories assigned to the strategies are listed in the Appendix Table 1, which is based on “species/market categories, complexes, management groups” on the website of PacFIN (<http://www.psmfc.org/pacfin/codes.html>).

Eight tows were assigned to the Pacific whiting strategy but this element of the WCGOP does not cover the shoreside or offshore components of this fishery so the tows were not included in these analyses. The shoreside whiting fleet retain their catch and the catch is sampled at the port of delivery by state port samplers. One hundred percent of the at-sea whiting fleet is observed by industry-funded observers and the data are summarized and reported elsewhere.

Depth Range: Bycatch is also expected to vary with depth. Therefore, three depth ranges are used in this analyses: (1) 0-100 FM, (2) 100-200 FM, and (3) >200 FM. The depth ranges (1) and (2) include the upper boundary.

Area: For these analyses the west coast is divided into North and South areas along the line of 40° 10' N.

Period: The two month trip-limit period is used, (1) Sep-Oct, 2001, (2) Nov-Dec, 2001, (3) Jan-Feb, 2002, (4) Mar-Apr, 2002, (5) May-Jun, 2002, and (6) Jul-Aug, 2002. The observer program sent the first trawl observer on a trip that started before the end of few trips that started in August 2001 and ended in September 2001 so did not cover the entire trip limit period and therefore and not included in these analyses.

Tow: In order to accurately assign the data to an area the basic unit of observation for these analyses is tow.

15. Ratio estimators for discard and bycatch rates

In this report the ratio estimator technique (Cochran 1977) is used to estimate bycatch and discard rates for 23 selected species (Appendix Tables II, III and IV). The fish species selected are the all overfished stocks, prohibited species (salmon, Pacific halibut), and the other assessed stocks. The ratio estimates (R_{ijkl}) are calculated by area (i), depth range (j), target strategy (k), and period (l):

$$R_{ijkl} = \sum_t y_{ijklt} / \sum_t x_{ijklt}$$

where y_{ijklt} is the discarded or retained pounds of a species in the tow t . Three denominators (x_{ijklt}) are presented here: duration in hours of the sampled tow t , the cumulated catches in pounds of the target species that define the tow strategy, and the cumulated catches of all groundfish in the tow t . The first denominator is an un-standardized catch per unit effort for the area-depth-strategy-period stratum. The second and third denominators are used to provide different perspectives for these preliminary analyses. The variance of R_{ijkl} is approximated by using the following equation (Pikitch et al. 1998):

$$Var(R_{ijkl}) = \left(\frac{\bar{y}_{ijkl}}{\bar{x}_{ijkl}} \right)^2 \left[\frac{s^2(\bar{y}_{ijkl})}{\bar{y}_{ijkl}^2} + \frac{s^2(\bar{x}_{ijkl})}{\bar{x}_{ijkl}^2} - \left(\frac{s^2(\bar{y}_{ijkl})s^2(\bar{x}_{ijkl})}{\bar{x}_{ijkl}^2 \bar{y}_{ijkl}^2} \right) \right]$$

where \bar{x}_{ijkl} and \bar{y}_{ijkl} are the means of x_{ijkl} and y_{ijkl} over the tows and $s(\bar{x}_{ijkl})$ and $s(\bar{y}_{ijkl})$ are their standard errors. Note that $Var(R_{ijkl})$ is not 0 when $y_{ijkl} = 0$ for all tows because all x_{ijkl} values are not necessarily 0 or equal.

Results

Use of Logbook data

Because 2002 logbook data have yet to be completed, only 2001 logbook data from September to December 2001 period, can be used for analyses in this report. For these analyses, the mid-water tows that target Pacific whiting (total whiting catch / total groundfish catch > 0.6) are excluded since these tows were not part of sampling protocol. Eight tows that do not have groundfish landings are also excluded from the analysis. In order make logbook data comparable to the observer data, the analyses here are limited to the gears coded in the logbooks as ‘GFS’, ‘GFL’, ‘GFT’, ‘FFT’, and ‘MDT’. (See PacFIN website for full the description of these gear codes). Using these criteria, in this period September to December 2001, a total of 6,312 tows (Table 1) were fished over 1,527 trips and were recorded in logbook data (Note: In Table 2 the number of trips reported is 1,564. This number includes the 37 trips for which there were no matching logbook records.)

Due to the difficulty experienced in matching the trips and tows recorded in logbooks and those recorded in observer data, only 490 out of 739 observer tows can be matched with the logbook tows and 113 out of 150 observer trips can be matched with trips. Better matching with logbooks could occur with 100% logbook submission and more reliable logging of trip information.

Use of Fish Ticket Data

For the 618 observer trips recorded in the first year of the observer program, 15 trips do not have the associated Fish Ticket Ids (FTID’s). For the remaining 603 trips, the fish tickets for 114 trips have yet to be submitted to PacFIN database. Interestingly, of these 129 trips without fish tickets, only five are in the most recent period analyzed for this

study. In contrast, there are 45 and 35 trips that do not have fish tickets in the earlier periods of Jan-Feb, 2002 and Mar-Apr, 2002, respectively.

In order to compare observers' tow-by-tow landing for each species/category with the landing obtained from fish ticket, the trip-aggregated fish ticket landings for each species/category are distributed proportionally across the tows using the following formula. Let x_{ik} be the observed landing of the species/category i in the tow k and y_i be the fish ticket landings of the species/category i . The adjusted landing is

$$C_{ik} = y_i \left(x_{ik} / \sum_k x_{ik} \right)$$

Figure 1 shows the comparisons between adjusted and observer-estimated landings for 16 selected species. There is general agreement for bocaccio (BCC1), chilipepper (CLP1), dover sole (DOVR), lingcod (LCOD), longspine thornyhead (LSP1), POP (POP2), petrole sole (PTRL), widow rockfish (WDW1), and yellowtail rockfish (YTR1) but discrepancies are found in arrowtooth flounder (ARTH), canary rockfish (CNR1), shortspine thornyhead (SSP1), and especially sanddab (SDAB) and skates (SKAT) as shown in Figures 2 and 3.

The observers were asked to suggest the reasons for the discrepancies of sanddabs and skates. The reasons found include possible after-market discard, use by processors of different names for the species/categories, retention of the landings for crab bait, and incorrect use of the product conversion factor for gutted fish. These reasons may also apply to the smaller discrepancies seen in other species.

Overall Coverage levels

The initial program design was implemented with the goal of covering a majority of the vessels in the fleet in the first two years. The observer program exceeded this goal, cycling through most of the limited entry trawl fleet in one year. There was a small number of boats that were not covered primarily because space on the vessel could not

accommodate an observer.³ The program also was designed to attain an initial coverage of 10% of the landed catch as reported in the fish tickets. We have met that goal (Table 3).

Table 3 summarizes the total fish ticket landings of groundfish and groundfish plus sharks and skates by period and port group. For the six periods, the observer coverage ranges from 7% to 14% with 10% overall. Inclusion of sharks and skates do not affect the resultant percent coverage in landings. However, the landings of skates and some other species are not reported or under-estimated in the fish tickets (Figures 2 and 3).

Spatial Distribution of Observations

A total of 618 trips that used trawl gears were sampled during the first year of the observer program. Table 4 lists the distribution of observer trips by period, area, and port group. Sampling effort in Washington coastal and Columbia River ports, Santa Barbara area ports, Tillamook area ports, Brookings area ports, and Bodega Bay area ports are lower than the other ports. Considering the proximity of Washington Columbia River ports to Oregon Columbia River ports, and the proximity of Brookings area ports to Crescent City area ports the sampling effort in these regions is probably sufficient.

A total of 3,623 tows were taken during the 618 observer trips (one trip was abandoned after a few failed tows). The distribution of tows for 2001 and 2002 by port group, period, and depth range is shown in Table 5. Most of the tows are in the 0-100 FM depth zone. Comparison of tow locations between 2001 logbook and observer-sampled tows indicates that the majority of fishing effort is in this depth range (Figures 4 and 5, also see Table 6). There is evidence in these data of some difficulties in obtaining completely accurate location information. Since observers usually do not have independent GPS equipment, they must rely on vessel information for tow locations. In some cases data entry errors are apparent when tows are reported in unfishable locations. The

³ The National observer program has provided funding for a workshop to discuss the issues of getting observer observations on small vessels. The results of this workshop may assist us in developing protocols for observing such vessels in the trawl fleet.

implementation of a VMS system in the west coast groundfish fishery in 2003 can make better location information available to the program.

An examination of tow locations from individual ports (Figures 4 and 5) reveals that in many cases fishing locations are clustered in a narrow band that extends offshore from the port. It is also clear that Oregon fleets are more mobile than the fleets in the other two states. This information can be useful in allocating sampling effort.

Coverage by Target Strategies

Table 6 describes how tows were categorized into the five target strategies. There are 103 tows categorized as non-GF (non-groundfish) strategy tows. They are categorized as such because none of the species that define the five target strategies are retained.

Fishing was closed in the period of October to December 2001 to harvesting of DTS species, slope rockfish, and lingcod (PFMC, 2002). The effect of the closure is reflected in the low number of tows occurring during this period.

Bycatch Estimates

The discarded and retained catches in pounds for 23 selected species by target strategy, depth range, and period are shown in Appendix Table II (north of 40°10'N) and Appendix Table III (south of 40°10'N). However, caution should be paid when examining data in Appendix Tables II and III. Some categories have a very small number of sampled tows. One should consult Appendix Table IV for number of tows.

Some patterns in bycatch can be discerned from a preliminary examination of these data. In the north and south areas, almost all Pacific whiting from all non-whiting target tows are discarded. The discards of sharks and skates are relatively high in both areas and for all strategies. In the northern area, the following patterns for other species are evident. For DTS tows, most of the discarded sablefish and shortspine thornyhead occurred in the 0-100FM and 100-200FM strata. For the shelf rockfish (RKF) strategy, most of discarded arrowtooth flounder is in 0-100FM stratum in the north area. Although most of

the discarded yellowtail rockfish is in the shelf rockfish (RKF) strategy in 0-100FM, the percentage discard is only 14%. For the flatfish strategy most of the discards of dover sole are in 0-100FM and 100-200FM strata, of darkblotched rockfish in the 100-200FM stratum, of lingcod in 0-100FM stratum, and of thornyheads in >200FM stratum.

In the southern area, most of the discarded poundage of the four species targeted by DTS strategy occurs in >200FM depth range. Most of the discards (in pounds) for sablefish, bocaccio, chilipepper, and lingcod for the shelf rockfish (RKF) strategy and the highest percentages discard are in 0-100FM.

Ratio estimators for discard and bycatch rates based on observer data

If observer data could be matched with logbook data, the observed tows could be viewed as a set of samples from the population defined by the logbook information. However, the entry of the some logbook information by the states can lag by more than a year. Therefore a tow-to-tow match cannot be performed on all of the data collected in the first year by the observer program. Therefore, the ratio estimators for discard and bycatch rates are calculated from the observer data alone. Three different ratio estimators for the 23 selected species by area, strategy, depth range, and period are presented here. The three estimators are: (1) discard and bycatch per hour towed, (2) discard and bycatch per pound of target species landed, and (3) discard and bycatch per pound of total groundfish landed. The results are listed in Appendix Tables IV.A (Northern area) and IV.B (Southern area).

The standard errors around the estimators are large, especially when the number of tows available for estimation is small. Because the information on the size of each stratum is not available, due to the unavailability of logbook data, the estimation of total discard and bycatch for the fleet cannot be completed at this time. Once the logbook data are available, this information will be calculated. When interpreting the rates presented here the reader should be aware that in some instances there are very small sample sizes. In part, this is because populations of some species are small, and thus, the encounters are rare.

Figure 6 shows the frequency distribution discard weights for three example species in the Northern and Southern areas. These figures illustrate a trend of very rare instances of large bycatches.

Discussion

The goal of this initial data report is to provide, in a timely fashion, the information from the first year of observer data collection. It is anticipated that by continually producing such reports when significant increments of data are available we provide timely adjustments to both the data collection and data analyses. In the second year of the program the number of observers has increased and the program has expanded the amount of coverage on other sectors of the fleet. Therefore, future data reports will not only include more observer information from the trawl fleet, but will include information on both the fixed gear and open access fleets.

Even in this initial report, some relevant patterns have emerged. In the absence of any *a priori* statistical data on the variability in bycatch, an initial goal of the program was to achieve 10% coverage of the landed catch by limited entry trawl fleet. This goal was attained. Of course, further analyses will determine if this continues to be an appropriate overall level of coverage. Moreover, while the initial coverage goals generally have been met, we can identify some areas where adjustments can be made. Information on the spatial distribution of the coverage indicates that there are some areas in Southern California that have fewer observer trips. Sampling effort can be improved in Santa Barbara area ports. In addition, while Los Angeles and San Diego area ports have little limited entry trawl effort, they could be added into the future sampling plans since they are important ports for the open access fishery. The analyses here also indicate vessels have high fidelity to certain locations around the ports (Figure 5). This gives us useful information that can be used to adjust the allocation of sampling effort. For instance, a lack of coverage revealed in one area can be easily remedied by adding coverage in a single port.

Unfortunately, the analyses that could be included in this report were limited by the lack of available logbook information from 2002. Clearly, if analyses that depend on logbook information are to be conducted in a more timely fashion, then resources must be in place to allow the information to be entered into the state systems more quickly.

There are other analyses that we have identified as a high priority that were not included here. For example it is clear to the program that an investigation of potential “observer effects” is one of the next analytical task that should be completed. These analyses should include examination difference in such things as: fishing ground, catch per unit effort, trip limit attainment, catch sorting and marketing and sale strategies on observed versus unobserved vessels.

Since this is the first year of data collection accumulated sample sizes are consequently low. Therefore, variability of estimates for discard and bycatch rates is high. These high variances are not only the result of low samples sizes, but are an accurate reflection of the high variances in the tow-to-tow catches of these populations. This is the same level of variability that causes imprecision in the results of resource surveys. Not only does this high variability cause an imprecise estimate of the mean rate, it also causes a very high imprecision in the estimate of the variance itself. As the data accumulate, these estimates will stabilize.

Populations of some species of groundfish are small (e.g. cowcod, bocaccio, canary) and therefore these species have a small probability of appearing in sampled tows. Therefore, it will be important to employ statistical modeling to understand the bycatch of these species, rather than depending on more traditional sampling techniques.

The “patchy” distribution of some of these species is clear from the frequency distribution of number of tows relative to discarded pounds (Figure 6). A further accumulation of data will allow us to study the spatial and temporal distribution of these high discard events. This may allow future re-distribution of observer coverage to better

sample these rare events. However, it is clear that optimization of coverage for every important species could be very difficult because spatial and temporal patterns of many of these species will differ greatly. In addition, the logistics of observer deployment make multiple, detailed, individual optimizations difficult.

We have attempted to estimate bycatch rates for some species using the current data. These estimates of bycatch must be viewed carefully and only in the context of the current fishing regulations. When trip limits were first implemented in the 1980s, the goal was to slow the rate of catch for particular species that were targets of the fishing effort. Because a fisher cannot control their catch exactly, overages of these trip limits resulted in discard. Pikitch's discard study in the late 1980s found an average discard rate of 16%. That is, the total fleetwide discard of widow rockfish was 16% of the total fleetwide catch of widow rockfish, accumulated across all strategies that caught widow rockfish. This 16% discard factor was used throughout the 1990s for other species as they came under trip limit management because there were no direct observations of trip limit induced discard of these species.

Beginning in 2000, draft rebuilding plans for overfished species resulted in extreme reductions in trip limits for these overfished species to essentially remove incentives for fishing activities that would target these species. The goal was to keep the total catch of these overfished species below the prescribed levels in the rebuilding plan. These overfished species were no longer subject to a significant target fishery (some like cowcod, and now bocaccio, were prohibited from being landed), but they still may be bycatch in fishing activities targeted on other species. In addition, some, most, or all of this bycatch could be discarded depending upon the regulations.

The analytical goal for both target species and bycatch species is to obtain the best estimate of total catch. For target species, most catch is retained so the analytical method of choice is to obtain a census of the retained catch from fish tickets and to inflate this level with the estimated discard factor. For bycatch species (non-target species), most catch may not be retained. Therefore, the analysis becomes a direct estimation of total

catch. This is done by estimating bycatch rates, which are defined as the ratio of the amount of catch (bycatch) of a particular species (for example canary rockfish) to the amount of catch for a target fishery (for example all nearshore flatfish). With these rates and a logbook-based calculation of the total catch of each target fishery, the total bycatch (for each depth strata) of the subject species can be estimated. It is important to recognize, that discard rates in the first method for target species area are completely different in concept than the bycatch rates in the latter method for the highly constrained and prohibited species. For the highly constrained species, the discard rate may now be nearly 100%, and the goal of the observer program is to determine whether the total catch is below the biological limit laid out in the rebuilding plan.

Finally, this observer program has taken a designed-based approach to determining bycatch rates. This is conceptually similar to the way in which past observer and logbook data were processed by Hastie (2003) to forecast bycatch rates for the 2003 fishery in a bycatch management model. It is unclear as yet if the first year of observer data are sufficient to update all the bycatch rates in the current groundfish bycatch management model. Some remaining steps are to: 1) Obtain the 2002 logbook data and use these data to validate if the observer data are representative of fleet-wide activity, 2) Investigate patterns of bycatch by season, depth, and target strategy to improve the basis for stratification of the bycatch management model currently in use, and 3) Calculate, where sample size is adequate, the bycatch rates from observer data for the stratification cells of the bycatch management model.

As this report is being written, the SSC of the council is meeting to review the bycatch management model and make recommendations on how best to transition to the use of the observer data. We look forward to using this advice. As the amount of observer data collected for any particular strata increases, it is a high priority to incorporate these contemporary data in the model used to guide west coast groundfish management.⁴

⁴ For copies of unpublished manuscripts cited in this report or hardcopies of this report contact the West Coast Observer Program at NWFSC.observerprogram@noaa.gov

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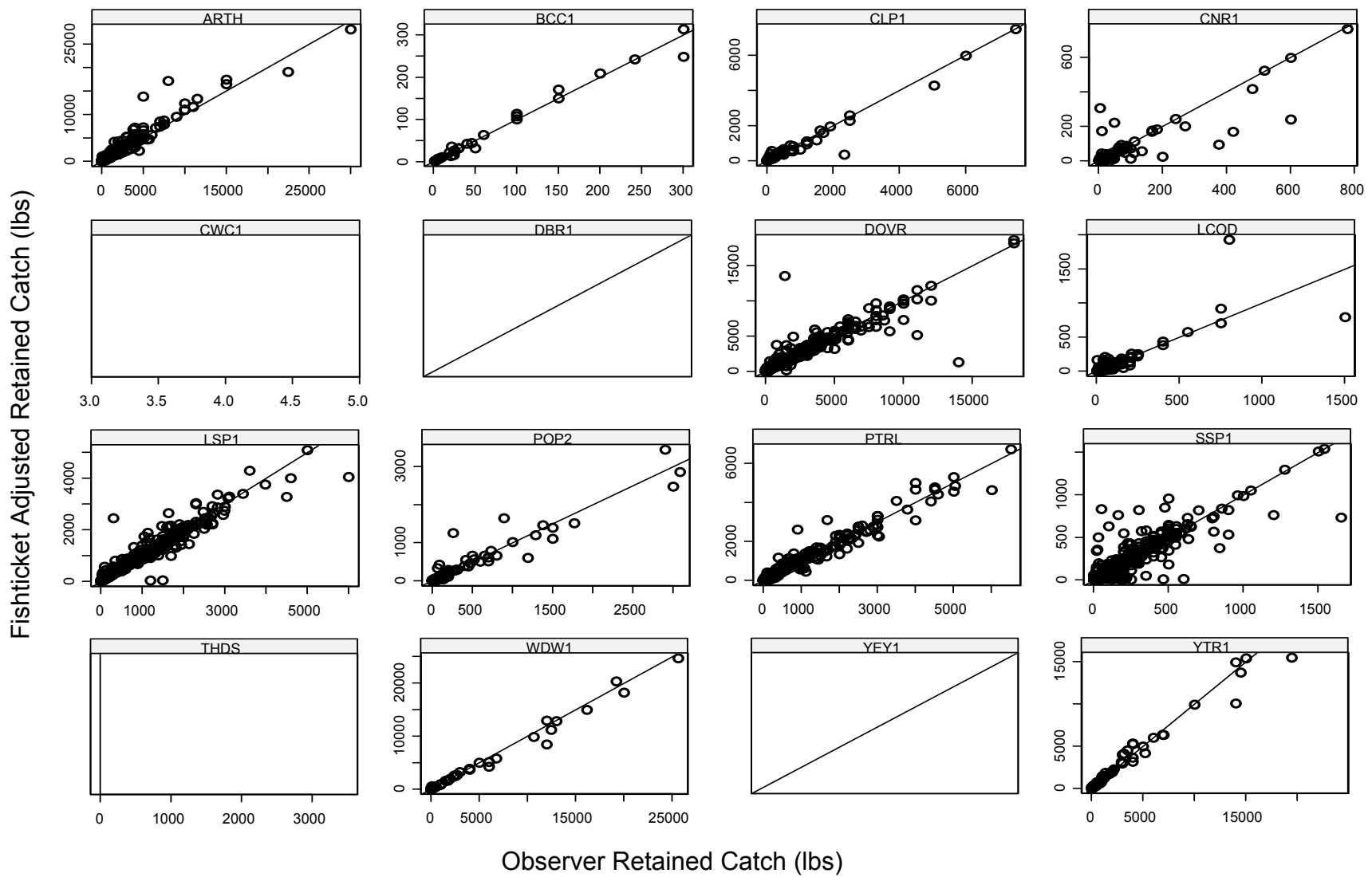


Figure 1. Comparison between fish ticket-adjusted and observed-estimated landings for 16 species.

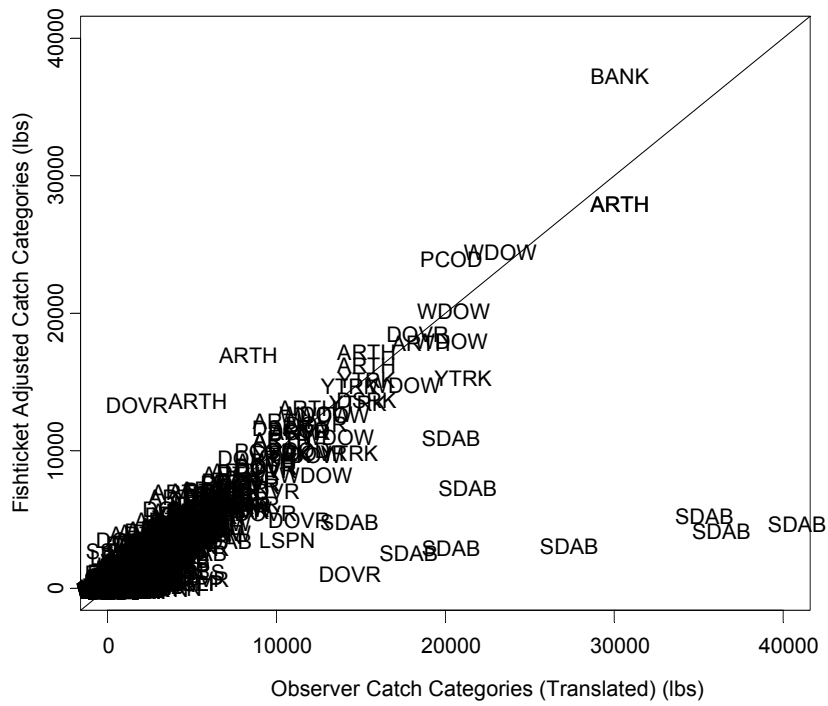


Figure 2. Observer versus fishticket adjusted landings for all species/catch categories, by tow, for the 2001-2002 Observer data.

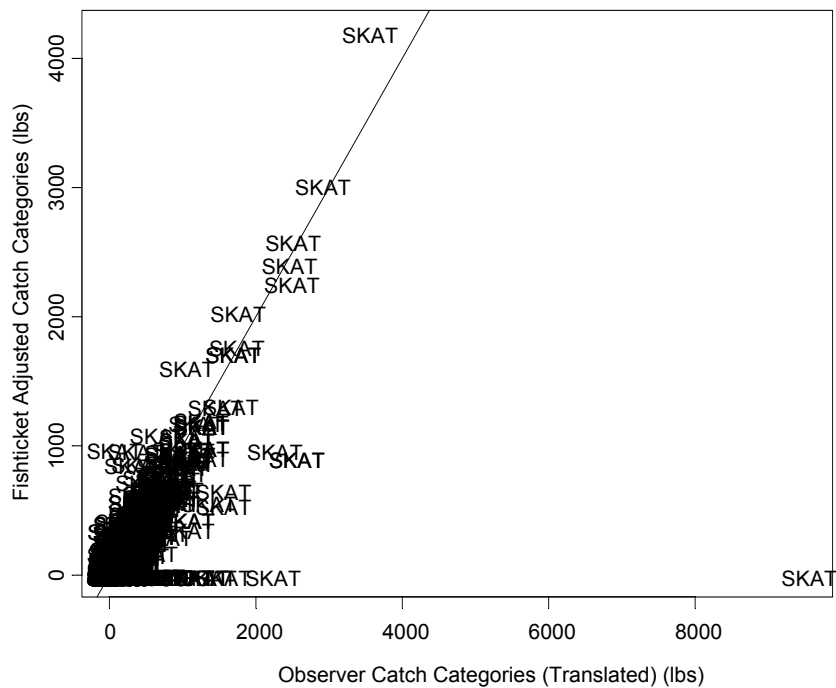


Figure 3. Observer versus fish ticket adjusted landings for skates, by tow, for the 2001-2002 Observer data.

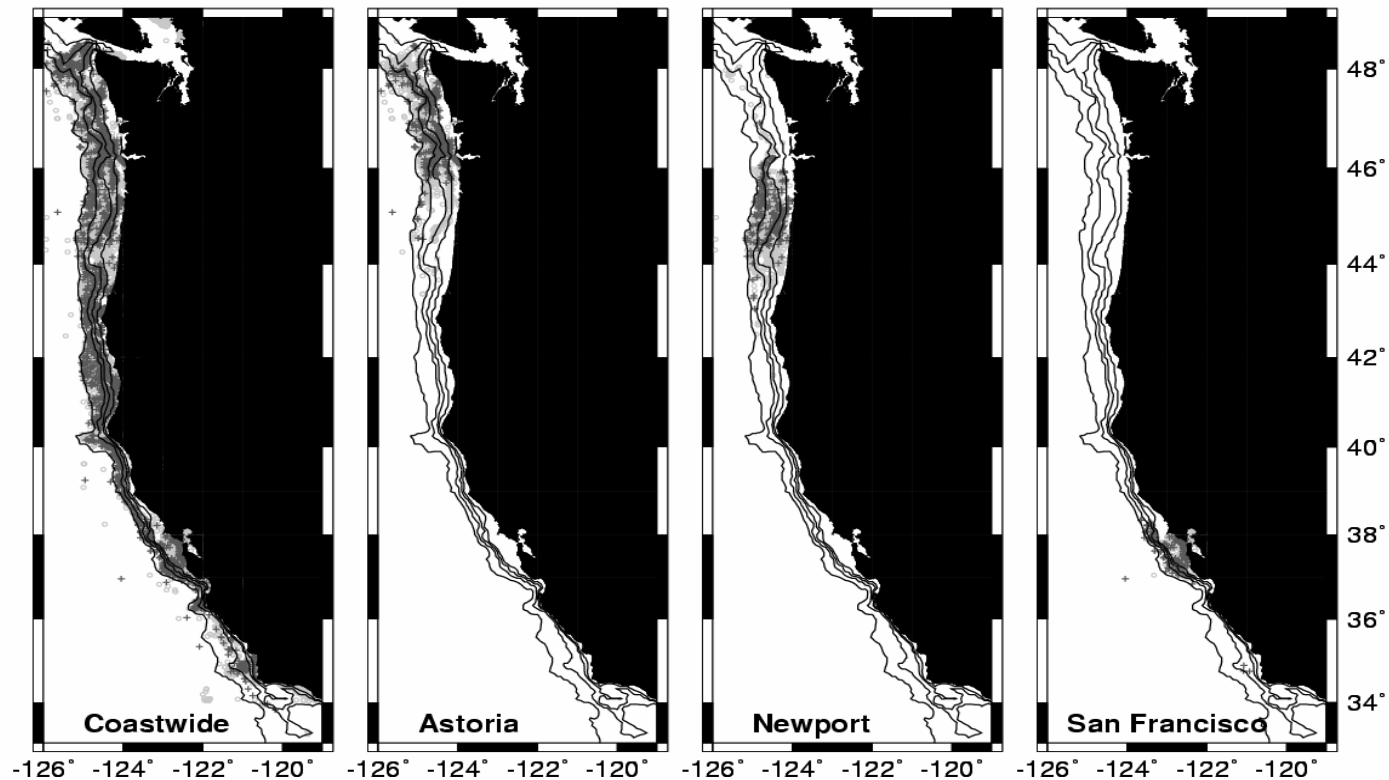


Figure 4. Tow locations of 2001 trawl logbook (open gray circles) and of observer data collected in the period from September 2001 to August 2002 (+) for all coastwide ports, Astoria area ports, Newport area ports, and San Francisco area ports. The negative values on the x-axis denote western longitude, the y-axis is northern latitude. Also, shown in the figure are 50, 100, 250, and 700 FM depth contours.

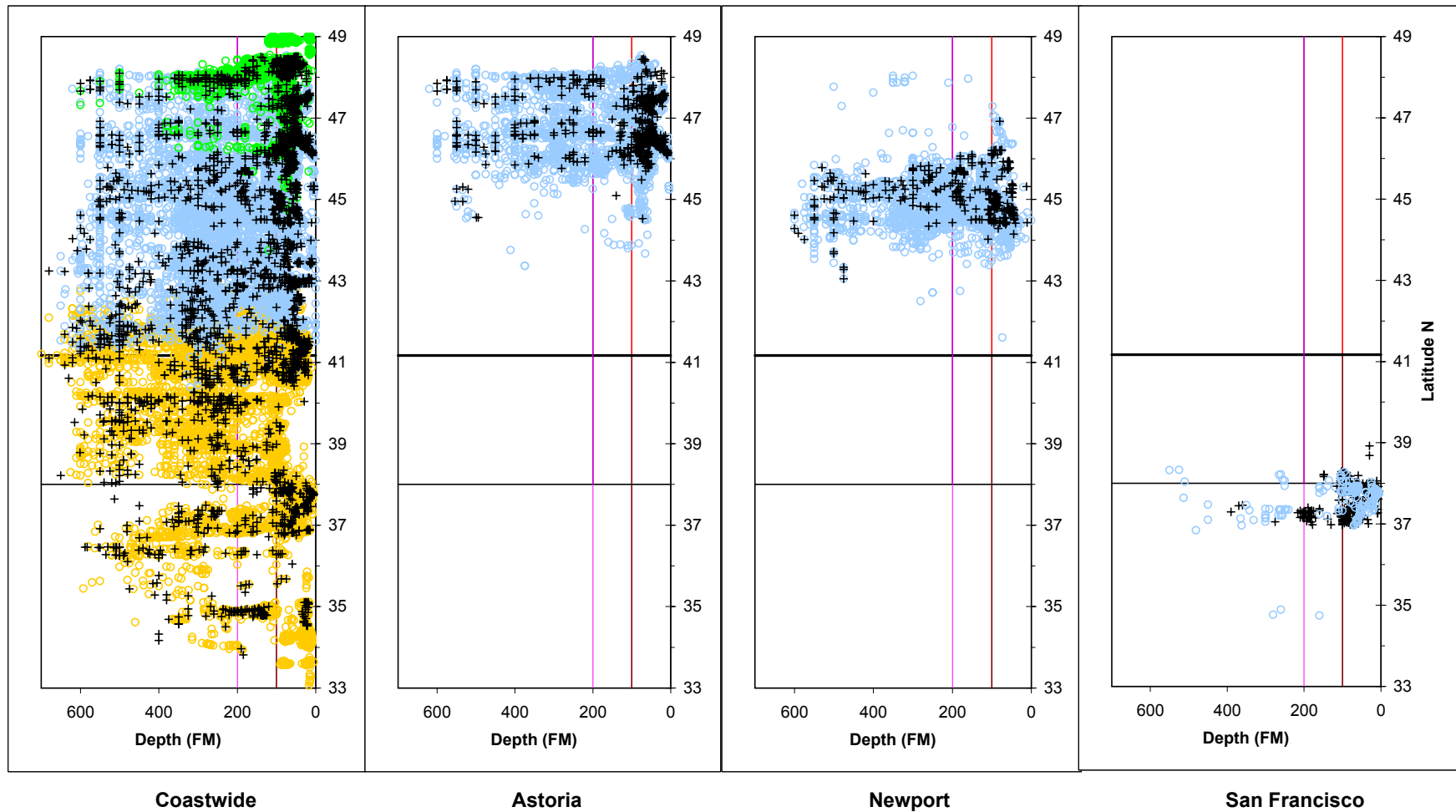


Figure 5. Tow distribution in depth and latitude for 2001 trawl logbook (+) and observer data collected in the period from September 2001 to August 2002 (open grey circles) for all ports (coastwide), Astoria area ports, Newport area ports, and San Francisco area ports.

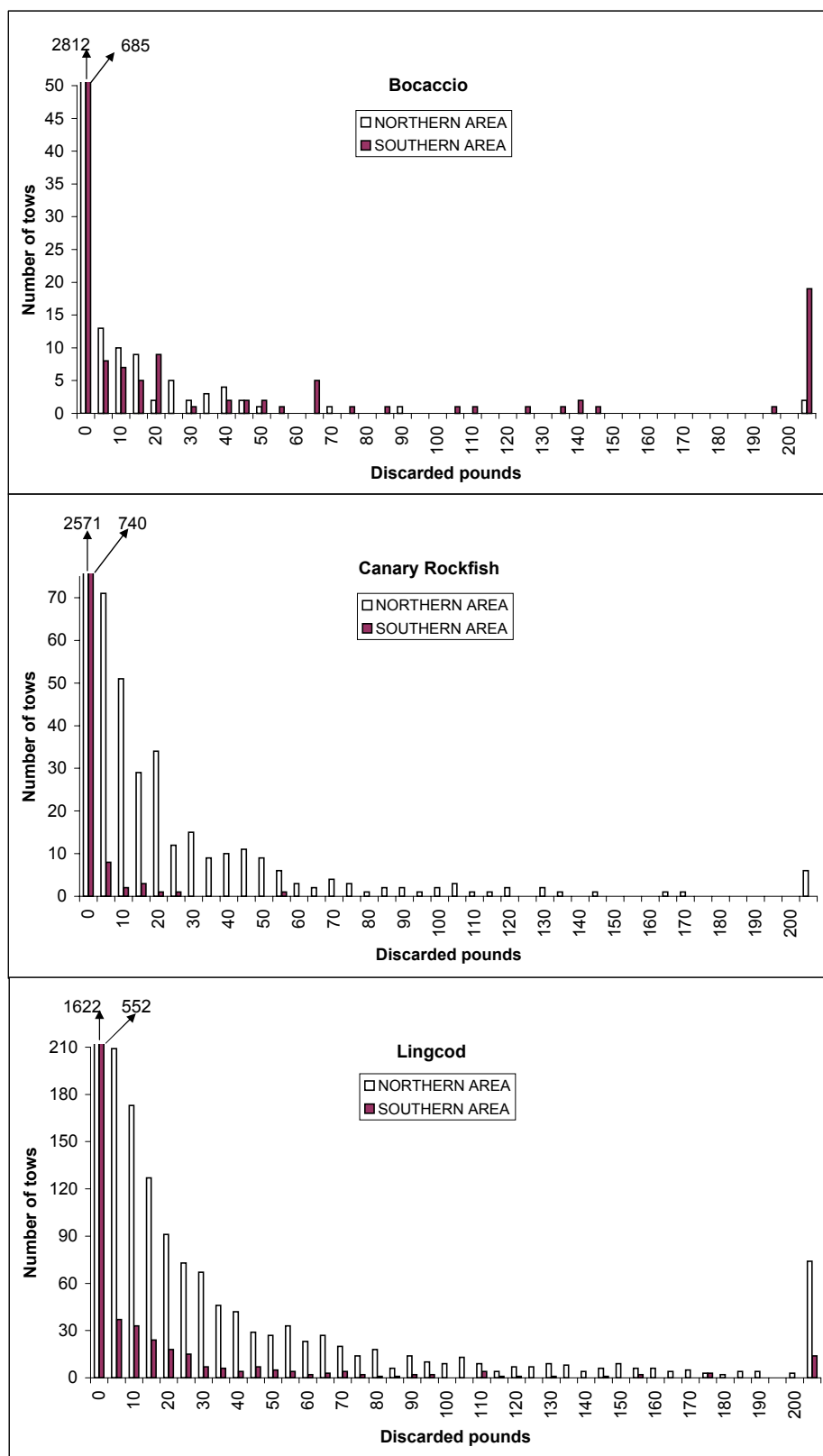


Figure 6. Histograms for discarded pounds (in number of tows) for bocaccio, canary rockfish, and lingcod in norther and southern areas divided by 40°10' N

Table 1.
Distribution of total and observed tows obtained from September-December, 2001, by depth range, period, and area.

All data													
Depth	Target	Sep-Oct, 2001				Nov-Dec, 2001				2001 Total			
Range	Strategy ⁵	N ¹	S ²	Missing*	Total ³	N ¹	S ²	Missing*	Total ³	N ¹	S ²	Missing*	Total ³
0-100 FM	DTS	294	3		297	5	1		6	299	4		303
	Shelf RKF	44	85		129	198	38		236	242	123		365
	Slope RKF	1	6		7		1		1	1	7		8
	Flatfish	1,441	1,096	13	2,550	426	875	12	1,313	1,867	1,971	25	3,863
	Non GF ⁴		2		2		2		2				4
	SUM	1,780	1,192	13	2,985	629	917	12	1,558	2,409	2,109	25	4,543
100-200 FM	DTS	235	12		247	2	2		4	237	14		251
	Shelf RKF	1	26		27	4	16		20	5	42		47
	Slope RKF	18	26	1	45		35		35	18	61	1	80
	Flatfish	292	78		370	165	133		298	457	211		668
	Non GF ⁴	2	1		3				2	2	1		3
	SUM	548	143	1	692	171	186		357	719	329	1	1,049
> 200 FM	DTS	395	212		607		2		2	395	214		609
	Slope RKF	5	3		8		18		18	5	21		26
	Flatfish	19	11		30	26	28		54	45	39		84
	Non GF ⁴		1		1								1
	SUM	419	227		646	26	48		74	445	275		720
Grand Total		2,747	1,562	14	4,323	826	1,151	12	1,989	3,573	2,713	26	6,312

Observed													
Depth	Target	Sep-Oct, 2001				Nov-Dec, 2001				2001 Total			
Range	Strategy ⁵	N ¹	S ²	Missing*	Total ³	N ¹	S ²	Missing*	Total ³	N ¹	S ²	Missing*	Total ³
0-100 FM	DTS	9			9					9			9
	Shelf RKF	5	8		13	33	1		34	38	9		47
	Flatfish	107	118		225	61	29		90	168	147		315
	SUM	121	126		247	94	30		124	215	156		371
100-200 FM	DTS		19		19						19		19
	Shelf RKF	3			3					3			3
	Slope RKF		4		4	5			5	5	4		9
	Flatfish	33	13		46	5	13		18	38	26		64
	SUM	36	36		72	10	13		23	46	49		95
> 200 FM	DTS		20		20								20
	Flatfish	4			4								4
	SUM	4	20		24					4	20		24
Grand Total		161	182		343	104	43		147	265	225		490

* Missing = Positions not recorded in logbooks.

¹ N = North of 40°10'

² S = South of 40°10'

³ Total = N + S

⁴ Non GF = Tow with no groundfish retained, no catch in the net or all catch was discarded.

⁵ Target Strategy = The species/ category with the largest cumulative catch among the five strategies (the species for Pacific whiting, DTS, Shelf rockfish, slope rockfish and flatfish strategies are listed in Appendix Table I).

Table 2.
Summary of trips in logbook and observer data. Note that
37 trips with an observer on board do not have logbook records.

period		No observer on board	Observer on board	Total
Sep-Oct, 2001	Logbook	852	80	932
Nov-Dec, 2001	Logbook	562	33	595
Sep-Dec, 2001	Sum	1414	113	1527
Sep-Dec, 2001	No Logbook	0	37	37
Total		1414	150	1564

Table 3.
Summary of observed and total landings (lbs) for groundfish and groundfish plus sharks and skates obtained from fish ticket data.

Port Group	Category	Sep-Oct, 2001			Nov-Dec, 2001			Jan-Feb, 2002		
		Observed	Total	% Observed	Observed	Total	% Observed	Observed	Total	% Observed
BODEGA BAY AREA PORTS	Groundfish		55,282	0%		82,376	0%		134,076	0%
	Groundfish+Shark+Skate		55,282	0%		82,376	0%		134,120	0%
FORT BRAGG AREA PORTS	Groundfish		551,240	0%		40,589	0%	47,694	610,326	8%
	Groundfish+Shark+Skate		558,621	0%		43,064	0%	47,779	617,451	8%
BROOKINGS AREA PORTS	Groundfish		29,127	0%	1,170	160,701	1%		5,244	0%
	Groundfish+Shark+Skate		32,184	0%	1,525	161,056	1%		5,244	0%
COOS BAY AREA PORTS	Groundfish	16,830	265,897	6%	12,532	340,426	4%		449,367	0%
	Groundfish+Shark+Skate	25,675	321,239	8%	15,011	376,221	4%		472,176	0%
CRESCENT CITY AREA PORTS	Groundfish	35,160	432,506	8%	19,324	118,719	16%	44,487	385,231	12%
	Groundfish+Shark+Skate	36,681	497,365	7%	34,757	149,819	23%	47,660	403,584	12%
COLUMBIA RIVER PORTS (OR)	Groundfish	7,295	694,299	1%	163,772	656,474	25%		72,595	0%
	Groundfish+Shark+Skate	7,295	698,105	1%	163,772	656,474	25%		72,836	0%
COLUMBIA RIVER PORTS (WA)	Groundfish	32,021	32,021	100%		79,312	0%		41,337	0%
	Groundfish+Shark+Skate	32,021	32,021	100%		79,312	0%		41,337	0%
WASHINGTON COASTAL PORTS	Groundfish		69,288	0%	39,005	78,940	49%			
	Groundfish+Shark+Skate		69,318	0%	39,005	78,940	49%			
EUREKA AREA PORTS	Groundfish	68,823	591,162	12%	24,668	315,193	8%	136,544	736,135	19%
	Groundfish+Shark+Skate	104,007	723,856	14%	24,668	331,884	7%	141,188	748,963	19%
LOS ANGEL PORTS	Groundfish		46	0%					1,155	0%
	Groundfish+Shark+Skate		46	0%					1,155	0%
MONTEREY AREA PORTS	Groundfish	25,143	277,890	9%	29,615	240,353	12%	34,377	391,572	9%
	Groundfish+Shark+Skate	25,143	278,496	9%	29,615	242,190	12%	34,377	393,546	9%
MORRO BAY AREA PORTS	Groundfish	54,813	180,776	30%	3,480	115,131	3%	18,261	259,024	7%
	Groundfish+Shark+Skate	54,839	181,633	30%	3,520	115,799	3%	18,261	259,102	7%
NEWPORT AREA PORTS	Groundfish	72,006	325,635	22%	65,550	401,486	16%			
	Groundfish+Shark+Skate	79,296	394,417	20%	68,436	432,828	16%			
NORTH PUGET SOUND PORTS	Groundfish	32,868	2,686,842	1%	53,685	751,907	7%		533,833	0%
	Groundfish+Shark+Skate	46,771	2,820,224	2%	54,846	967,059	6%		574,216	0%
SANTA BARBARA AREA PORTS	Groundfish		10,737	0%		18,552	0%		34,450	0%
	Groundfish+Shark+Skate		11,664	0%		19,036	0%		35,858	0%
SAN DIEGO AREA PORTS	Groundfish									
	Groundfish+Shark+Skate									
SAN FRANCISCO AREA PORTS	Groundfish	89,063	567,487	16%	13,217	311,364	4%	141,426	464,418	30%
	Groundfish+Shark+Skate	90,291	575,200	16%	13,217	318,330	4%	158,273	484,702	33%
TILLAMOOK AREA PORTS	Groundfish		44,827	0%						
	Groundfish+Shark+Skate		45,065	0%						
PORT NOT RECORDED*	Groundfish								1,021	0%
	Groundfish+Shark+Skate								1,021	0%
Sum	Groundfish	434,022	6,815,062	6%	426,018	3,711,523	11%	422,789	4,119,784	10%
	Groundfish+Shark+Skate	502,019	7,294,736	7%	448,372	4,054,388	11%	447,538	4,245,311	11%

* Port not recorded = Port of landing not recorded.

Table 3. Continued.

Port Group	Category	Mar-Apr,2002			May-Jun, 2002			Jul-Aug, 2002			Grand Total		
		Observed	Total	% Observed	Observed	Total	% Observed	Observed	Total	% Observed	Observed	Total	% Observed
BODEGA BAY AREA PORTS	Groundfish	49,514	110,329	45%	5,674	55,691	10%	27,883	91,749	30%	83,071	529,503	16%
	Groundfish+Shark+Skate	49,514	110,359	45%	5,674	55,691	10%	27,883	93,291	30%	83,071	531,119	16%
FORT BRAGG AREA PORTS	Groundfish	67,319	687,312	10%	26,313	717,844	4%	315,226	1,020,979	31%	456,552	3,628,290	13%
	Groundfish+Shark+Skate	68,581	689,479	10%	26,313	717,844	4%	315,226	1,020,979	31%	457,899	3,647,438	13%
BROOKINGS AREA PORTS	Groundfish		2,690	0%		8,848	0%		656	0%	1,170	207,266	1%
	Groundfish+Shark+Skate		2,690	0%		8,848	0%		656	0%	1,525	210,678	1%
COOS BAY AREA PORTS	Groundfish	56,126	440,023	13%	21,319	319,974	7%	109,156	266,869	41%	215,963	2,082,556	10%
	Groundfish+Shark+Skate	57,913	496,433	12%	23,874	328,080	7%	116,296	296,309	39%	238,769	2,290,458	10%
CRESCENT CITY AREA PORTS	Groundfish	106,217	664,400	16%	49,901	578,854	9%	61,232	430,483	14%	316,321	2,610,193	12%
	Groundfish+Shark+Skate	110,271	684,992	16%	53,487	582,816	9%	61,232	430,589	14%	344,088	2,749,165	13%
COLUMBIA RIVER PORTS (OR)	Groundfish	62,344	227,821	27%	275,221	950,551	29%	181,199	1,458,018	12%	689,831	4,059,758	17%
	Groundfish+Shark+Skate	67,943	236,550	29%	287,863	986,742	29%	189,218	1,540,209	12%	716,091	4,190,916	17%
COLUMBIA RIVER PORTS (WA)	Groundfish		51,705	0%							32,021	204,375	16%
	Groundfish+Shark+Skate		51,705	0%							32,021	204,375	16%
WASHINGTON COASTAL PORTS	Groundfish	21,952	105,741	21%	15,023	219,644	7%		8,385,574	0%	75,980	8,859,187	1%
	Groundfish+Shark+Skate	22,717	106,506	21%	15,093	219,749	7%		8,425,483	0%	76,815	8,899,996	1%
EUREKA AREA PORTS	Groundfish	90,244	892,011	10%	58,913	526,591	11%	33,498	532,579	6%	412,690	3,593,671	11%
	Groundfish+Shark+Skate	93,151	907,839	10%	58,913	526,591	11%	33,498	532,594	6%	455,425	3,771,727	12%
LOS ANGEL PORTS	Groundfish		1,911	0%		1,845	0%		4	0%	-	4,961	0%
	Groundfish+Shark+Skate		1,911	0%		1,865	0%		4	0%	-	4,981	0%
MONTEREY AREA PORTS	Groundfish	2,663	322,647	1%	68,085	342,906	20%	27,860	205,182	14%	187,743	1,780,550	11%
	Groundfish+Shark+Skate	2,845	340,987	1%	69,045	348,732	20%	27,860	206,291	14%	188,885	1,810,242	10%
MORRO BAY AREA PORTS	Groundfish	76,206	185,821	41%	74,371	267,730	28%		364,142	0%	227,131	1,372,624	17%
	Groundfish+Shark+Skate	76,522	186,272	41%	74,371	267,752	28%		364,194	0%	227,513	1,374,752	17%
NEWPORT AREA PORTS	Groundfish	32,118	79,425	40%	43,116	324,047	13%	4,662	381,870	1%	217,452	1,512,463	14%
	Groundfish+Shark+Skate	61,042	151,367	40%	64,158	416,359	15%	7,096	432,811	2%	280,028	1,827,782	15%
NORTH PUGET SOUND PORTS	Groundfish	53,720	1,118,946	5%	316,459	2,719,758	12%	585,129	4,012,709	15%	1,041,861	11,823,995	9%
	Groundfish+Shark+Skate	119,447	1,225,628	10%	328,289	3,047,970	11%	602,704	4,161,680	14%	1,152,057	12,796,777	9%
SANTA BARBARA AREA PORTS	Groundfish		24,764	0%		27,182	0%		22,697	0%	-	138,382	0%
	Groundfish+Shark+Skate		25,308	0%		27,248	0%		23,055	0%	-	142,169	0%
SAN DIEGO AREA PORTS	Groundfish								2,766	0%	-	2,766	0%
	Groundfish+Shark+Skate								2,766	0%	-	2,766	0%
SAN FRANCISCO AREA PORTS	Groundfish	100,875	615,231	16%		320,437	0%	27,780	242,307	11%	372,361	2,521,244	15%
	Groundfish+Shark+Skate	101,974	620,087	16%		322,087	0%	28,210	242,855	12%	391,965	2,563,261	15%
TILLAMOOK AREA PORTS	Groundfish		28,535	0%	21,860	57,537	38%	7,707	54,912	14%	29,567	185,811	16%
	Groundfish+Shark+Skate		28,915	0%	22,626	58,375	39%	7,985	55,923	14%	30,611	188,278	16%
PORT NOT RECORDED*	Groundfish		32	0%							-	1,053	0%
	Groundfish+Shark+Skate		32	0%							-	1,053	0%
Sum	Groundfish	719,298	5,559,344	13%	976,255	7,439,439	13%	1,381,332	17,473,496	8%	4,359,714	45,118,648	10%
	Groundfish+Shark+Skate	831,920	5,867,060	14%	1,029,706	7,916,749	13%	1,417,208	17,829,689	8%	4,676,763	47,207,933	10%

* Port not recorded = Port of landing not recorded.

Table 4.

Number of sampled trawl trips by period, area, and port group. The trips are allocated to the nearest area.

Port group	Sep-Oct, 2001			Nov-Dec, 2001			Jan-Feb, 2002		
	N ¹	S ²	Total ³	N ¹	S ²	Total ³	N ¹	S ²	Total ³
BODEGA BAY AREA PORTS									
FORT BRAGG AREA PORTS							4		4
BROOKINGS AREA PORTS	1		1	1		1	3		3
COOS BAY AREA PORTS	7		7	3		3	7		7
CRESCENT CITY AREA PORTS	5		5	7		7	5		5
COLUMBIA RIVER PORTS (OR)	8		8	9		9	10		10
COLUMBIA RIVER PORTS (WA)	1		1						
WASHINGTON COASTAL PORTS				2		2	3		3
EUREKA AREA PORTS	22	1	23	2		2	15		15
MONTEREY AREA PORTS		1	1		7	7		5	5
MORRO BAY AREA PORTS		7	7		2	2		1	1
NEWPORT AREA PORTS	7		7	4		4	7		7
NORTH PUGET SOUND PORTS	7		7	14		14	11		11
SANTA BARBARA AREA PORTS								1	1
SAN FRANCISCO AREA PORTS		31	31		3	3	15		15
TILLAMOOK AREA PORTS									
PORT NOT RECORDED ⁴									
TOTAL	58	40	98	42	12	54	61	26	87

Port group	Mar-Apr, 2002			May-Jun, 2002			Jul-Aug, 2002			SUM		
	N ¹	S ²	Total ³	N ¹	S ²	Total ³	N ¹	S ²	Total ³	N ¹	S ²	Total ³
BODEGA BAY AREA PORTS			4			5			1	0	10	10
FORT BRAGG AREA PORTS			6			2			16	0	28	28
BROOKINGS AREA PORTS	4		4	2		2				11	0	11
COOS BAY AREA PORTS	15	1	16	13		13	12		12	57	1	58
CRESCENT CITY AREA PORTS	19		19	9	1	10	12		12	57	1	58
COLUMBIA RIVER PORTS (OR)	15		15	23		23	12		12	77	0	77
COLUMBIA RIVER PORTS (WA)										1	0	1
WASHINGTON COASTAL PORTS	2		2	1		1				8	0	8
EUREKA AREA PORTS	11	1	12	9	1	10	5	6	11	64	9	73
MONTEREY AREA PORTS		6	6		7	7		8	8	0	34	34
MORRO BAY AREA PORTS		6	6		4	4				0	20	20
NEWPORT AREA PORTS	11		11	7		7	1		1	37	0	37
NORTH PUGET SOUND PORTS	20		20	19		19	55		55	126	0	126
SANTA BARBARA AREA PORTS										0	1	1
SAN FRANCISCO AREA PORTS		10	10		1	1		4	4	0	64	64
TILLAMOOK AREA PORTS	1		1	6		6	2		2	9	0	9
PORT NOT RECORDED ⁴							2	1	3	2	1	3
TOTAL	98	34	132	89	21	110	101	36	137	449	169	618

¹ N = North of 40°10'² S = South of 40°10'³ Total = N + S⁴ Port not recorded = Port of landing not recorded.

Table 5.

Number of tows sampled by trip limit period, port group areas, and depth range (Fathoms).

Port Group Area	Sep-Oct, 2001				Nov-Dec, 2001				2001 Total
	0-100	100-200	> 200	Total	0-100	100-200	> 200	Total	
FORT BRAGG AREA PORTS			10	10	3	1	4		14
COOS BAY AREA PORTS	18	12	21	51	12	13	25		76
CRESCENT CITY AREA PORTS	2	1	18	21	32		32		53
COLUMBIA RIVER PORTS (OR)	10	16	22	48	32		32		80
COLUMBIA RIVER PORTS (WA)	12	3		15					15
WASHINGTON COASTAL PORTS					6		6		6
EUREKA AREA PORTS	65	10		75	3		3		78
MONTEREY AREA PORTS		1	4	5	14	12	26		31
MORRO BAY AREA PORTS	3	34	4	41	16		16		57
NEWPORT AREA PORTS	54	23	11	88	27		27		115
NORTH PUGET SOUND PORTS	28	2		30	29	13	42		72
SAN FRANCISCO AREA PORTS	129	7		136	6		6		142
TOTAL	321	109	90	520	180	39	219		739

Port Group Area	Jan-Feb, 2002				Mar-Apr, 2002				Total
	0-100	100-200	> 200	Total	0-100	100-200	> 200	Total	
BODEGA BAY AREA PORTS						8	16		24
FORT BRAGG AREA PORTS	1	7	13	21	5	3	22		30
BROOKINGS AREA PORTS			9	9			17		17
COOS BAY AREA PORTS		6	29	35	4	23	57		84
CRESCENT CITY AREA PORTS	4	2	15	21	29	1	45		75
COLUMBIA RIVER PORTS (OR)		20	41	61	57	14	58		129
WASHINGTON COASTAL PORTS		13	13	26	33				33
EUREKA AREA PORTS	1	12	46	59	14	5	41		60
MONTEREY AREA PORTS	1	1	20	22	13				13
MORRO BAY AREA PORTS		13	4	17	14	2	4		20
NEWPORT AREA PORTS		23	35	58	27	33	48		108
NORTH PUGET SOUND PORTS	26	23	43	92	68	6	20		94
SANTA BARBARA AREA PORTS		4	3	7					
SAN FRANCISCO AREA PORTS	61	6	9	76	15	3	17		35
TILLAMOOK AREA PORTS					15				15
PORT NOT RECORDED ¹									
TOTAL	94	130	280	504	294	98	345		737

Port Group Area	May-Jun, 2002				Jul-Aug, 2002				2002 Total
	0-100	100-200	> 200	Total	0-100	100-200	> 200	Total	
BODEGA BAY AREA PORTS	7	5	2	14			3		41
FORT BRAGG AREA PORTS	2	1	5	8		5	77		141
BROOKINGS AREA PORTS			7	7					33
COOS BAY AREA PORTS	34	9	9	52	110	10	6	126	297
CRESCENT CITY AREA PORTS	31	11	26	68	51	3	6	60	224
COLUMBIA RIVER PORTS (OR)	326	13	10	349	130	7	2	139	678
WASHINGTON COASTAL PORTS	17			17					76
EUREKA AREA PORTS	10	13	22	45	21	4	43	68	232
MONTEREY AREA PORTS	7	3	10	20	1	4	27	32	87
MORRO BAY AREA PORTS		4	16	20					57
NEWPORT AREA PORTS	45	9	5	59	5			5	230
NORTH PUGET SOUND PORTS	96			96	245	32		277	559
SANTA BARBARA AREA PORTS									7
SAN FRANCISCO AREA PORTS		1	2	3	1	1	6	8	122
TILLAMOOK AREA PORTS	41			41	19			19	75
PORT NOT RECORDED ¹					22		3	25	25
TOTAL	616	69	114	799	605	66	173	844	2884

¹ Port not recorded = Port of landing for tows not recorded.

Table 6.
Number of tows sampled by trip limit period, target strategy, area, and depth range (Fathoms).

Depth Range	Target Strategy ⁵	Sep-Oct, 2001			Nov-Dec, 2001			Jan-Feb, 2002		
		N ¹	S ²	Total ³	N ¹	S ²	Total ³	N ¹	S ²	Total ³
0-100	Whiting									
	DTS	37		37				1		1
	Shelf RKF	6	4	10	54	1	55		3	3
	Slope RKF	1		1						
	Flatfish	136	127	263	82	35	117	20	53	73
	Non GF ⁴	9	1	10	8		8	10	7	17
	Sum	189	132	321	144	36	180	31	63	94
100-200	DTS	38	1	39				12		12
	Shelf RKF		5	5					5	5
	Slope RKF	5	1	6		5	5	11	18	29
	Flatfish	23	34	57	26	6	32	74	5	79
	Non GF ⁴	1	1	2	1	1	2	2	3	5
	Sum	67	42	109	27	12	39	99	31	130
> 200	DTS	80	4	84				176	46	222
	Slope RKF	1		1						
	Flatfish		4	4				48		48
	Non GF ⁴	1		1				7	3	10
	Sum	82	8	90				231	49	280
Total		338	182	520	171	48	219	361	143	504

Depth Range	Target Strategy ⁵	Mar-Apr, 2002			May-Jun, 2002			Jul-Aug, 2002			Total		
		N ¹	S ²	Total ³	N ¹	S ²	Total ³	N ¹	S ²	Total ³	N ¹	S ²	Total ³
0-100	Whiting							8		8	8	0	8
	DTS	44	2	46	121	3	124	59		59	262	5	267
	Shelf RKF	8	8	16	31	6	37	37		37	136	22	158
	Slope RKF				2		2				3	0	3
	Flatfish	191	37	228	429	7	436	491		491	1349	259	1608
	Non GF ⁴	4		4	17		17	8	2	10	56	10	66
	Sum	247	47	294	600	16	616	603	2	605	1814	296	2110
100-200	DTS	39	4	43	33	7	40	26	8	34	148	20	168
	Shelf RKF	1	2	3	1	2	3	1		1	3	14	17
	Slope RKF	4	11	15	13	8	21	4	3	7	37	46	83
	Flatfish	33	1	34	4		4	21	3	24	181	49	230
	Non GF ⁴	1	2	3	1		1				6	7	13
	Sum	78	20	98	52	17	69	52	14	66	375	136	511
> 200	DTS	255	59	314	64	37	101	14	156	170	589	302	891
	Shelf RKF					10	10		1	1	1	11	12
	Slope RKF	22		22				1		1	71	4	75
	Non GF ⁴	8	1	9	1	2	3		1	1	17	7	24
	Sum	285	60	345	65	49	114	15	158	173	678	324	1002
Total		610	127	737	717	82	799	670	174	844	2867	756	3623

¹ N = North of 40°10'

² S = South of 40°10'

³ Total = N + S

⁴ Non GF = Tow with no groundfish retained, no catch in the net, or all catch was discarded.

⁵ Target Strategy = The species/category with the largest cumulative catch among the five strategies (The species for Pacific whiting, DTS, Shelf rockfish, Slope rockfish and Flatfish strategies are listed in Appendix Table I.)

Appendix A. Observer Haul Form

D or R	Port	Date	Time
D			
R			

OBSERVER HAUL FORM

Page ____ of ____

Observer name _____ Year _____ Vessel Name _____

USCG Vessel # _____ GF Permit # _____ Trip # _____

Fish Ticket # _____ Vessel Logbook # _____

Haul/ Set #	DATE		TIME (local 24-hour clock)	LATITUDE		LONGITUDE		Average depth of catch (fathoms)	Gear Type	Target Strategy	Observer Total Catch Estimate (tenth of a pound)	Weight Method	Gear performance	Fixed Gear - Total Hook/Pot Count Trawler - midtow position/duration effects or Comments
	Month	Day		Degrees	Minutes	Degrees	Minutes							
			Start ¹		.		.							
			End ²		.		.							
			Start		.		.							
			End		.		.							
			Start		.		.							
			End		.		.							
			Start ¹		.		.							
			End		.		.							
			Start		.		.							
			End		.		.							
			Start		.		.							
			End		.		.							
			Start		.		.							
			End		.		.							
			Start		.		.							
			End		.		.							
			Start		.		.							
			End		.		.							

¹ Start - Time the brake is set

² End - Time the haul back is started

06/10/02

Date: _____

Page ____ of ____

Haul # _____

Trip # _____

USCG Vessel # _____

06/10/02

D

Date: _____ Page ____ of ____

RETAINED SPECIES COMPOSITION DECK FORM

Haul # _____ Trip # _____ USCG # _____

[illegible]

Method : 1-Whole haul species 2-Single basket 3-Multiple basket

06/10/02

R

Appendix E. Trip Discard Form

Vessel: _____

Year: _____

TRIP DISCARD FORM

Page ____ of ____

Trip #: _____

USCG Vessel #: _____

Date		Time	Category/ Species	Weight of fish	# of Fish	Weight Method	Reason for Discard	Comments
Month	Day							

Appendix F: Gear Codes

Observer Program Gear		PacFIN Gear				
Code	Description	Type*	GRID	Group	Short Name	Description
14	ALL NET GEAR EXCEPT TRAWL	2	NET	ALL	NETS	ALL NET GEAR EXCEPT TRAWL
16	ALL OTHER MISCELLANEOUS GEAR	2	MSC	ALL	OTH GEARS	ALL OTHER MISCELLANEOUS GEAR
15	ALL TROLL GEAR	2	TLS	ALL	TROLLS	ALL TROLL GEAR
4	DANISH/SCOTTISH SEINE (TRAWL)	1	DNT	TWL	DNSH SEINE	DANISH/SCOTTISH SEINE (TRAWL)
10	FISH POT	1	FPT	POT	FISH POT	FISH POT
	GROUND FISH TRAWL, FOOTROPE < 8 in.					GROUND FISH TRAWL, FOOTROPE < 8 in.
1		1	GFS	TWL	GFTRAWL<8	
	GROUND FISH TRAWL, FOOTROPE > 8 in.					GROUND FISH TRAWL, FOOTROPE > 8 in.
2		1	GFL	TWL	GFTRAWL>8	
6	LOGLINE OR SETLINE	1	LGL	HKL	LOGLINE	LOGLINE OR SETLINE
3	MIDWATER TRAWL	1	MDT	TWL	MID-TRAWL	MIDWATER TRAWL
9	OTHER HOOK AND LINE GEAR	1	OHL	HKL	OTH HK&LN	OTHER HOOK AND LINE GEAR
5	OTHER TRAWL GEAR	1	OTW	TWL	OTH TRAWLS	OTHER TRAWL GEAR
8	POLE (COMMERCIAL)	1	POL	HKL	POLE(COM)	POLE (COMMERCIAL)
					PRWN-	
11	PRAWN TRAWL	1	PWT	TWS	TRAWL	PRAWN TRAWL
13	SHRIMP TRAWL, DOUBLE RIGGED	1	DST	TWS	DBL-SHRIMP	SHRIMP TRAWL, DOUBLE RIGGED
12	SHRIMP TRAWL, SINGLE RIGGED	1	SST	TWS	SGL-SHRIMP	SHRIMP TRAWL, SINGLE RIGGED
7	VERTICAL HOOK AND LINE GEAR	1	VHL	HKL	VRTCL HKL	VERTICAL HOOK AND LINE GEAR

* 1=gear code; 2=gear group

Appendix G: Oracle Database

Database Table Hierarchy

TRIPS

- FISHING_ACTIVITIES
 - FISHING_ACT_LOCS
 - CATCHES
 - SUB_SAMPLES
 - SPECIES_COMPOSITIONS
 - BIOLOGICAL_SPECIMENS
 - SPECIMEN_CHARACTERISTICS

Database Table Descriptions

The database tables listed in the table below are a subset of the total tables contained in the Oracle database. They represent the tables that are actually used to contain the observer data collected by the WCGOP.

TABLE NAME	DESCRIPTION
BIOLOGICAL_SPECIMENS	Physical measurements collected for an individual fish, mammal or bird occurring in a sub sample
CATCHES	PacFIN catch category based estimates of fish caught during a haul or set
CATCH_CATEGORIES	PacFIN catch categories
FISHING_ACTIVITIES	Fishing hauls or sets occurring during a trip
FISHING_ACT_LOCS	Locations of hauls or sets
PORTS	Coastal cities where fishing activity is based out of
SPECIES	Fish, mammal and bird species that might be encountered during fishing
SPECIMEN_CHARACTERISTICS	Physical specimens collected for an individual fish, mammal or bird
SPECIES_COMPOSTIONS	Weights and counts for individual species occurring in a sub sample
SUB_SAMPLES	Sets of species weights and counts resulting from sampling catches occurring in a haul or set
TRIPS	Sets of fishing activities that occur between the time a vessel leaves port and when it returns
VESSELS	Trawl, longline, pot or other fishing vessels

Appendix Table I.

Species/categories identifier (SPID) used in logbook and fish ticket data. The observer program uses scientific name, which was translated into equivalent SPID. Target species/categories for the six target strategies are grouped together: PWHT: Pacific whiting strategy, DTS: DTS strategy, SHLF: shelf rockfish strategy, SLOP: slope rockfish strategy, FLAT: flatfish strategy, SHOR: nearshore rockfish strategy. Grouped name is to determine whether the species is groundfish (GRND), sharks (SHRK), skates (SKAT), salmon(SAMN), Pacific Halibut (PHLB), and dungenes crab (DCRB).

SPID	Common Name	Scientific Name	Target Strategy	Grouped Name
PWHT	PACIFIC WHITING	MERLUCCIIUS PRODUCTUS	PWHT	GRND
DOVR	DOVER SOLE	MICROSTOMUS PACIFICUS	DTS	GRND
LSP1	NOM. LONGSPINE THORNYHEAD	N/A	DTS	GRND
LSPN	LONGSPINE THORNYHEAD	SEBASTOLOBUS ALTIVELIS	DTS	GRND
SSP1	NOM. SHORTSPINE THORNYHEAD	N/A	DTS	GRND
SSPN	SHORTSPINE THORNYHEAD	SEBASTOLOBUS ALASCANUS	DTS	GRND
THD1	NOM. THORNYHEADS	N/A	DTS	GRND
THDS	THORNYHEADS (MIXED)	SEBASTOLOBUS SPP.	DTS	GRND
SABL	SABLEFISH	ANOPLOPOMA FIMBRIA	DTS	GRND
BCAC	BOCACCIO	SEBASTES PAUCISPINIS	SHLF	GRND
BCC1	NOM. BOCACCIO	N/A	SHLF	GRND
BRNZ	BRONZESPOTTED ROCKFISH	SEBASTES GILLI	SHLF	GRND
BRZ1	NOM. BRONZESPOTTED ROCKFISH	N/A	SHLF	GRND
CLP1	NOM. CHILIPEPPER	N/A	SHLF	GRND
CLPR	CHILIPEPPER	SEBASTES GOODEI	SHLF	GRND
CMEL	CHAMELEON ROCKFISH	SEBASTES PHILLIPSI	SHLF	GRND
CML1	NOM. CHAMELEON ROCKFISH	N/A	SHLF	GRND
CNR1	NOM. CANARY ROCKFISH	N/A	SHLF	GRND
CNRY	CANARY ROCKFISH	SEBASTES PINNIGER	SHLF	GRND
CWC1	NOM. COWCOD ROCKFISH	N/A	SHLF	GRND
CWCD	COWCOD ROCKFISH	SEBASTES LEVIS	SHLF	GRND
DWRF	DWARF-RED ROCKFISH	SEBASTES RUFIANUS	SHLF	GRND
FLAG	FLAG ROCKFISH	SEBASTES RUBRIVINCTUS	SHLF	GRND
FLG1	NOM. FLAG ROCKFISH	N/A	SHLF	GRND
FRCK	FRECKLED ROCKFISH	SEBASTES LENTIGINOSUS	SHLF	GRND
GBL1	NOM. GREENBLOTCHED ROCKFISH	N/A	SHLF	GRND
GBLC	GREENBLOTCHED ROCKFISH	SEBASTES ROSENBLATTI	SHLF	GRND
GSP1	NOM. GREENSPOTTED ROCKFISH	N/A	SHLF	GRND
GSPT	GREENSPOTTED ROCKFISH	SEBASTES CHLOROSTICTUS	SHLF	GRND
GSR1	NOM. GREENSTRIPED ROCKFISH	N/A	SHLF	GRND
GSRK	GREENSTRIPED ROCKFISH	SEBASTES ELONGATUS	SHLF	GRND
HBRK	HALFBANDED ROCKFISH	SEBASTES SEMICINCTUS	SHLF	GRND
HNY1	NOM. HONEYCOMB ROCKFISH	N/A	SHLF	GRND
HNYC	HONEYCOMB ROCKFISH	SEBASTES UMBROSUS	SHLF	GRND
MXR1	NOM. MEXICAN ROCKFISH	N/A	SHLF	GRND
MXRF	MEXICAN ROCKFISH	SEBASTES MACDONALDI	SHLF	GRND
NSLF	NORTHERN SHELF ROCKFISH	N/A	SHLF	GRND
NUSF	NOR. UNSP. SHELF ROCKFISH	N/A	SHLF	GRND
PGMY	PYGMY ROCKFISH	SEBASTES WILSONI	SHLF	GRND
PNK1	NOM. PINK ROCKFISH	N/A	SHLF	GRND
PNKR	PINK ROCKFISH	SEBASTES EOS	SHLF	GRND
PRR1	NOM. PINKROSE ROCKFISH	N/A	SHLF	GRND
PRRK	PINKROSE ROCKFISH	SEBASTES SIMULATOR	SHLF	GRND
RCK1	BOCACCIO+CHILIPEPPER RCKFSH	N/A	SHLF	GRND
RCK3	UNSP. DPWTR REDS RCKFSH	N/A	SHLF	GRND

Appendix Table I. Continued

SPID	Common Name	Scientific Name	Target Strategy	Grouped Name
RCK4	UNSP. REDS RCKFSH	N/A	SHLF	GRND
RCK8	CANARY+VERMILION RCKFSH	N/A	SHLF	GRND
REDS	REDSTRIPE ROCKFISH	SEBASTES PRORIGER	SHLF	GRND
ROS1	NOM. ROSY ROCKFISH	N/A	SHLF	GRND
ROSY	ROSY ROCKFISH	SEBASTES ROSACEUS	SHLF	GRND
RST1	NOM. ROSETHORN ROCKFISH	N/A	SHLF	GRND
RSTN	ROSETHORN ROCKFISH	SEBASTES HELVOMACULATUS	SHLF	GRND
SLGR	SILVERGREY ROCKFISH	SEBASTES BREVISPINIS	SHLF	GRND
SPK1	NOM. SPECKLED ROCKFISH	N/A	SHLF	GRND
SPKL	SPECKLED ROCKFISH	SEBASTES OVALIS	SHLF	GRND
SQR1	NOM. SQUARESPOT	N/A	SHLF	GRND
SQRS	SQUARESPOT ROCKFISH	SEBASTES HOPKINSI	SHLF	GRND
SSLF	SOUTHERN SHELF ROCKFISH	N/A	SHLF	GRND
STAR	STARRY ROCKFISH	SEBASTES CONSTELLATUS	SHLF	GRND
STL1	NOM. STRIPETAIL ROCKFISH	N/A	SHLF	GRND
STR1	NOM. STARRY ROCKFISH	N/A	SHLF	GRND
STRK	STRIPETAIL ROCKFISH	SEBASTES SAXICOLA	SHLF	GRND
SUSF	SOU. UNSP. SHELF ROCKFISH	N/A	SHLF	GRND
SWS1	NOM. SWORDSPINE ROCKFISH	N/A	SHLF	GRND
SWSP	SWORDSPINE ROCKFISH	SEBASTES ENSIFER	SHLF	GRND
TIGR	TIGER ROCKFISH	SEBASTES NIGROCINCTUS	SHLF	GRND
USLF	UNSP. SHELF ROCKFISH	N/A	SHLF	GRND
VRM1	NOM. VERMILLION ROCKFISH	N/A	SHLF	GRND
VRML	VERMILION ROCKFISH	SEBASTES MINIATUS	SHLF	GRND
WDOW	WIDOW ROCKFISH	SEBASTES ENTOMELAS	SHLF	GRND
WDW1	NOM. WIDOW ROCKFISH	N/A	SHLF	GRND
YEY1	NOM. YELLOWEYE ROCKFISH	N/A	SHLF	GRND
YEYE	YELLOWEYE ROCKFISH	SEBASTES RUBERRIMUS	SHLF	GRND
YTR1	NOM. YELLOWTAIL ROCKFISH	N/A	SHLF	GRND
YTRK	YELLOWTAIL ROCKFISH	SEBASTES FLAVIDUS	SHLF	GRND
ARR1	NOM. AURORA ROCKFISH	N/A	SLOP	GRND
ARRA	AURORA ROCKFISH	SEBASTES AURORA	SLOP	GRND
BANK	BANK ROCKFISH	SEBASTES RUFUS	SLOP	GRND
BGL1	NOM. BLACKGILL ROCKFISH	N/A	SLOP	GRND
BLGL	BLACKGILL ROCKFISH	SEBASTES MELANOSTOMUS	SLOP	GRND
BNK1	NOM. BANK ROCKFISH	N/A	SLOP	GRND
DBR1	NOM. DARKBLOTCHED ROCKFISH	N/A	SLOP	GRND
DBRK	DARKBLOTCHED ROCKFISH	SEBASTES CRAMERI	SLOP	GRND
NSLP	NORTHERN SLOPE ROCKFISH	N/A	SLOP	GRND
NUSP	NOR. UNSP. SLOPE ROCKFISH	N/A	SLOP	GRND
OSLR	OTHER SLOPE RKFSH	N/A	SLOP	GRND
POP	PACIFIC OCEAN PERCH	SEBASTES ALUTUS	SLOP	GRND
POP1	GEN. SHELF/SLOPE RF	N/A	SLOP	GRND
POP2	NOMINAL POP	N/A	SLOP	GRND
RCK5	UNSP. SMALL REDS RCKFSH	N/A	SLOP	GRND
RCK6	UNSP. ROSEFISH RCKFSH	N/A	SLOP	GRND

Appendix Table I. Continued

SPID	Common Name	Scientific Name	Target Strategy	Grouped Name
RDB1	NOM. REDBANDED ROCKFISH	N/A	SLOP	GRND
RDBD	REDBANDED ROCKFISH	SEBASTES BABCOCKI	SLOP	GRND
REYE	ROUGHEYE ROCKFISH	SEBASTES ALEUTIANUS	SLOP	GRND
SBL1	NOM. SHORTBELLY ROCKFISH	N/A	SLOP	GRND
SBLY	SHORTBELLY ROCKFISH	SEBASTES JORDANI	SLOP	GRND
SHRP	SHARPCIN ROCKFISH	SEBASTES ZACENTRUS	SLOP	GRND
SNOS	SPLITNOSE ROCKFISH	SEBASTES DIPLOPROA	SLOP	GRND
SNS1	NOM. SPLITNOSE ROCKFISH	N/A	SLOP	GRND
SRCK	__SLOPE-91 ROCKFISH	N/A	SLOP	GRND
SRKR	SHORTRAKER ROCKFISH	SEBASTES BOREALIS	SLOP	GRND
SSLP	SOUTHERN SLOPE ROCKFISH	N/A	SLOP	GRND
SUSP	SOU. UNSP. SLOPE ROCKFISH	N/A	SLOP	GRND
UDW1	SHORTRAKER+ROUGHEYE	N/A	SLOP	GRND
UPOP	UNSP. POP GROUP	N/A	SLOP	GRND
URK1	SRKR+REYE+NRCK+SHRP	N/A	SLOP	GRND
USLP	UNSP. SLOPE ROCKFISH	N/A	SLOP	GRND
USLR	UNSP. SLOPE RKFSH	N/A	SLOP	GRND
USR1	UNSP. SLOPE-91	N/A	SLOP	GRND
USR2	UNSP. SLOPE-93	N/A	SLOP	GRND
YMTH	YELLOWMOUTH ROCKFISH	SEBASTES REEDI	SLOP	GRND
ARTH	ARROWTOOTH FLOUNDER	ATHERESTHES STOMIAS	FLAT	GRND
BSOL	BUTTER SOLE	ISOPSETTA ISOLEPIS	FLAT	GRND
CHLB	CALIFORNIA HALIBUT	PARALICHTHYS CALIFORNICUS	FLAT	GRND
CSOL	CURLFIN SOLE	PLEURONICHTHYS DECURRENS	FLAT	GRND
DEEP	__DEEP-91 FLOUNDERS	N/A	FLAT	GRND
DFLT	UNSP. DEEP FLOUNDERS	N/A	FLAT	GRND
DTRB	DIAMOND TURBOT	HYPSPSETTA GUTTULATA	FLAT	GRND
EGLS	ENGLISH SOLE	PAROPHRYS VETULUS	FLAT	GRND
FLAT	__ALL FLATFISH	N/A	FLAT	GRND
FSOL	FLATHEAD SOLE	HIPPOGLOSSOIDES ELASSODON	FLAT	GRND
GTRB	GREENLAND TURBOT	REINHARDTIUS HIPPOGLOSSOIDES	FLAT	GRND
HTRB	HORNYHEAD TURBOT	PLEURONICHTHYS VERTICALIS	FLAT	GRND
LDAB	LONGFIN SANDDAB	CITHARICHTHYS XANTHOSTIGMA	FLAT	GRND
LDB1	NOM. LONGFIN SANDDAB	CITHARICHTHYS SPP.	FLAT	GRND
OFLT	OTHER FLATFISH	N/A	FLAT	GRND
PDAB	PACIFIC SANDDAB	CITHARICHTHYS SORDIDUS	FLAT	GRND
PDB1	NOM. PACIFIC SANDDAB	CITHARICHTHYS SPP.	FLAT	GRND
PTRL	PETRALE SOLE	EOPSETTA JORDANI	FLAT	GRND
REX	REX SOLE	GLYPTOCEPHALUS ZACHIRUS	FLAT	GRND
RFLT	REMAINING FLATFISH	N/A	FLAT	GRND
RSOL	ROCK SOLE	LEPIDOPSETTA BILINEATA	FLAT	GRND
SDAB	__SANDDABS	CITHARICHTHYS SPP.	FLAT	GRND
SDB1	NOM. SPECKLED SANDDAB	CITHARICHTHYS SPP.	FLAT	GRND
SFLT	UNSP. SHALLOW FLOUNDERS	N/A	FLAT	GRND
SHAL	__SHALLOW-91 FLOUNDERS	N/A	FLAT	GRND
SSDB	SPECKLED SANDDAB	CITHARICHTHYS STIGMAEUS	FLAT	GRND

Appendix Table I. Continued

SPID	Common Name	Scientific Name	Target Strategy	Grouped Name
SSOL	SAND SOLE	PSETTICHTHYS MELANOSTICTUS	FLAT	GRND
STRY	STARRY FLOUNDER	PLATICHTHYS STELLATUS	FLAT	GRND
TRBT	TURBOTS	N/A	FLAT	GRND
UDAB	UNSP. SANDDABS	CITHARICHTHYS SPP.	FLAT	GRND
UDF1	UNSP. DEEP-91 FLOUNDERS	N/A	FLAT	GRND
UDF2	UNSP. DEEP-95 FLOUNDERS	N/A	FLAT	GRND
UFL1	FLOUNDERS (NO FSOL)	N/A	FLAT	GRND
UFLT	UNSP. FLATFISH	N/A	FLAT	GRND
USF1	UNSP. SHALLOW-91 FLOUNDERS	N/A	FLAT	GRND
UTRB	UNSP. TURBOTS	N/A	FLAT	GRND
BLCK	BLACK ROCKFISH	SEBASTES MELANOPS	SHOR	GRND
BLK1	NOM. BLACK ROCKFISH	N/A	SHOR	GRND
BLU1	NOM. BLUE ROCKFISH	N/A	SHOR	GRND
BLUR	BLUE ROCKFISH	SEBASTES MYSTINUS	SHOR	GRND
BRW1	NOM. BROWN ROCKFISH	N/A	SHOR	GRND
BRWN	BROWN ROCKFISH	SEBASTES AURICULATUS	SHOR	GRND
BYEL	BLACK-AND-YELLOW ROCKFISH	SEBASTES CHRYSOMELAS	SHOR	GRND
BYL1	NOM. BLACK-AND-YELLOW ROCKFISH	N/A	SHOR	GRND
CHN1	NOM. CHINA ROCKFISH	N/A	SHOR	GRND
CHNA	CHINA ROCKFISH	SEBASTES NEBULOSUS	SHOR	GRND
CLC1	NOM. CALICO ROCKFISH	N/A	SHOR	GRND
CLCO	CALICO ROCKFISH	SEBASTES DALLI	SHOR	GRND
COP1	NOM. COPPER ROCKFISH	N/A	SHOR	GRND
COPP	COPPER ROCKFISH	SEBASTES CAURINUS	SHOR	GRND
GPH1	NOM. GOPHER ROCKFISH	N/A	SHOR	GRND
GPHR	GOPHER ROCKFISH	SEBASTES CARNATUS	SHOR	GRND
GRAS	GRASS ROCKFISH	SEBASTES RASTRELLIGER	SHOR	GRND
GRS1	NOM. GRASS ROCKFISH	N/A	SHOR	GRND
KLP1	NOM. KELP ROCKFISH	N/A	SHOR	GRND
KLPR	KELP ROCKFISH	SEBASTES ATROVIRENS	SHOR	GRND
NSHR	NORTHERN NEAR-SHORE ROCKFISH	N/A	SHOR	GRND
NUSR	NOR. UNSP. NEAR-SHORE ROCKFISH	N/A	SHOR	GRND
OLV1	NOM. OLIVE ROCKFISH	N/A	SHOR	GRND
OLVE	OLIVE ROCKFISH	SEBASTES SERRANOIDES	SHOR	GRND
QLB1	NOM. QUILLBACK ROCKFISH	N/A	SHOR	GRND
QLBK	QUILLBACK ROCKFISH	SEBASTES MALIGER	SHOR	GRND
RCK2	UNSP. BOLINA RCKFSH	N/A	SHOR	GRND
RCK7	UNSP. GOPHER RCKFSH	N/A	SHOR	GRND
RCK9	BLACK+BLUE ROCKFISH	N/A	SHOR	GRND
SSHR	SOUTHERN NEAR-SHORE ROCKFISH	N/A	SHOR	GRND
SUSR	SOU. UNSP. NEAR-SHORE ROCKFISH	N/A	SHOR	GRND
TRE1	NOM. TREEFISH	N/A	SHOR	GRND
TREE	TREEFISH	SEBASTES SERRICEPS	SHOR	GRND
USHR	UNSP. NEAR-SHORE ROCKFISH	N/A	SHOR	GRND

Appendix Table I. Continued

SPID	Common Name	Scientific Name	Target Strategy	Grouped Name
CBZ1	NOM. CABEZON	N/A	---	GRND
CBZN	CABEZON	SCORPAENICHTHYS MARMORATUS	---	GRND
CPLN	CAPELIN	MALLOTUS VILLOSUS	---	GRND
KGL1	NOM. KELP GREENLING	N/A	---	GRND
KLPG	KELP GREENLING	HEXAGRAMMOS DECAGRAMMUS	---	GRND
LCOD	LINGCOD	OPHIODON ELONGATUS	---	GRND
ORND	OTHER ROUND FISH	N/A	---	GRND
PCOD	PACIFIC COD	GADUS MACROCEPHALUS	---	GRND
PLCK	WALLEYE POLLOCK	THERAGRA CHALCOGRAMMA	---	GRND
ROND	__ALL ROUND FISH	N/A	---	GRND
RRND	REMAINING ROUND FISH	N/A	---	GRND
URND	UNSP. ROUND FISH	N/A	---	GRND
ASRK	PACIFIC ANGEL SHARK	SQUATINA CALIFORNICA	---	SHRK
BSRK	BLUE SHARK	PRIONACE GLAUCA	---	SHRK
ISRK	BIGEYE THRESHER SHARK	ALOPIAS SUPERCILIOUS	---	SHRK
MAKO	SHORTFIN MAKO	ISURUS OXYRINCHUS	---	SHRK
OSRK	OTHER SHARK	N/A	---	SHRK
PSRK	PELAGIC THRESHER SHARK	ALOPIAS PELAGICUS	---	SHRK
TSRK	COMMON THRESHER SHARK	ALOPIAS VULPINUS	---	SHRK
USRK	UNSP. SHARK	N/A	---	SHRK
BTRY	BAT RAY	MYLIOBATIS CALIFORNICA	---	SKAT
OSKT	OTHER SKATES	OTHER RAJIDAE	---	SKAT
SKAT	__ALL SKATES & RAYS	N/A	---	SKAT
BSKT	BIG SKATE	RAJA BINOCULATA	---	SKAT
CSKT	CALIFORNIA SKATE	RAJA INORNATA	---	SKAT
DSRK	SPINY DOGFISH	SQUALUS ACANTHIAS	---	SHRK
LSKT	LONGNOSE SKATE	RAJA RHINA	---	SKAT
LSRK	LEOPARD SHARK	TRIAKIS SEMIFASCIATA	---	SHRK
RATF	SPOTTED RATFISH	HYDROLAGUS COLLIEI	---	SHRK
SSRK	SOUPFIN SHARK	GALEORHINUS ZYOPTERUS	---	SHRK
USKT	UNSPECIFIED SKATE	UNSPECIFIED RAJIDAE	---	SKAT
PHLB	PACIFIC HALIBUT	HIPPOGLOSSUS STENOLEPIS	---	PHLB
CHNK	CHINOOK SALMON	ONCORHYNCHUS TSHAWYTSCHA	---	SAMN
CHUM	CHUM SALMON	ONCORHYNCHUS KETA	---	SAMN
COHO	COHO SALMON	ONCORHYNCHUS KISUTCH	---	SAMN
PINK	PINK SALMON	ONCORHYNCHUS GORBUSCHA	---	SAMN
SAMN	__ALL SALMON	N/A	---	SAMN
SOCK	SOCKEYE SALMON	ONCORHYNCHUS NERKA	---	SAMN
STLH	STEELHEAD	ONCORHYNCHUS MYKISS	---	SAMN
USMN	UNSP. SALMON	N/A	---	SAMN
DCRB	DUNGENESS CRAB	CANCER MAGISTER	---	DCRB

Appendix Table II.

Retained (R) and discarded (D) landings (lbs) and percent of discard, D/(R+D), for the 23 selected species obtained from the observer data in north of 41 °10', September, 2001 - August, 2002, by target strategy, depth range, and period. Non GF = Tow with no groundfish retained, no catch in the net or all catch was discarded.

Strategy	Depth Range	Species	Landings (lbs)	Sep-Oct, 2001	D/(D+R)	Nov-Dec, 2001	D/(D+R)	Jan-Feb, 2002	D/(D+R)	Mar-Apr, 2002	D/(D+R)	May-Jun, 2002	D/(D+R)	Jul-Aug, 2002	D/(D+R)	Total	D/(D+R)
Non GF	0-100FM	Whiting	Retained	-		-		-		-		-		-		-	
			Discarded	3,671	100%	-		8	100%	-		12	100%	-		3,690	100%
		Arrowtooth flounder	Retained	-		-		83	100%	13	100%	13	100%	372	100%	497	100%
			Discarded	16	100%	-		-		-		-		-		-	
		Petrale sole	Retained	-		-		579	100%	2	100%	5	100%	72	100%	665	100%
			Discarded	9	100%	-		-		-		-		-		-	
		Dover sole	Retained	-		-		-		-		-		-		-	
			Discarded	121	100%	0	100%	67	100%	30	100%	1	100%	-		219	100%
		Logspine thornyheads	Retained	-		-		-		-		-		-		-	
			Discarded	-		-		-		-		-		-		-	
		Shortspine thornyheads	Retained	-		-		0	100%	-		-		-		0	100%
			Discarded	-		-		-		-		-		-		-	
		Thornyheads	Retained	-		-		-		-		-		-		-	
			Discarded	-		-		-		-		-		-		-	
		Sablefish	Retained	-		-		-		-		-		-		-	
			Discarded	3,550	100%	-		-		18	100%	-		-		3,568	100%
		Bocaccio	Retained	-		-		87	100%	-		-		-		87	100%
			Discarded	-		-		-		-		-		-		-	
		Chilipepper	Retained	-		-		-		-		-		-		-	
			Discarded	-		-		-		-		-		-		-	
		Canary RKF	Retained	-		-		-		-		-		-		-	
			Discarded	19	100%	144	100%	189	100%	-		0	100%	-		352	100%
		Cowcod	Retained	-		-		-		-		-		-		-	
			Discarded	-		-		-		-		-		-		-	
		Widow RKF	Retained	-		-		-		-		-		-		-	
			Discarded	-		-		-		-		-		-		-	
		Yellowtail RKF	Retained	-		-		-		-		-		-		-	
			Discarded	-		8	100%	642	100%	-		-		-		650	100%
		Yelloweye RKF	Retained	-		-		-		-		-		-		-	
			Discarded	-		-		-		-		-		-		-	
		DarkBlotched RKF	Retained	-		-		-		-		-		-		-	
			Discarded	-		-		-		-		-		-		-	
		POP	Retained	-		-		-		-		-		-		-	
			Discarded	-		-		6	100%	-		-		-		6	100%
		Splitnose RKF	Retained	-		-		-		-		-		-		-	
			Discarded	-		-		1	100%	-		-		-		1	100%
		Black RKF	Retained	-		-		-		-		-		-		-	
			Discarded	-		-		-		-		-		-		-	
		Lingcod	Retained	-		-		-		-		-		-		-	
			Discarded	247	100%	-		228	100%	-		11	100%	26	100%	511	100%
		Pacific Halibut	Retained	-		-		-		-		-		-		-	
			Discarded	10	100%	-		3	100%	-		-		-		13	100%
		Salmon	Retained	-		-		-		-		-		-		-	
			Discarded	25	100%	80	100%	19	100%	-		-		-		124	100%
		Shark, Skate	Retained	-		-		2,200		-		-		-		2,200	
			Discarded	584	100%	7	100%	745	25%	573	100%	38	100%	-		1,947	47%
	Sum		Retained	-		-		2,200		-		-		-		2,200	
			Discarded	8,251	100%	240	100%	2,655	55%	636	100%	79	100%	470	100%	12,331	85%

Appendix Table II. Continued.

Appendix Table II. Continued.																	
Strategy	Depth Range	Species	Landings (lbs)	Sep-Oct, 2001	D/(D+R)	Nov-Dec, 2001	D/(D+R)	Jan-Feb, 2002	D/(D+R)	Mar-Apr, 2002	D/(D+R)	May-Jun, 2002	D/(D+R)	Jul-Aug, 2002	D/(D+R)	Total	D/(D+R)
Non GF	>200FM	Whiting	Retained					-								-	
			Discarded					2	100%							2	100%
		Arrowtooth flounder	Retained					-								-	
			Discarded					1	100%							1	100%
		Petrale sole	Retained					-								-	
			Discarded					5	100%							5	100%
		Dover sole	Retained					-								-	
			Discarded					3	100%							3	100%
		Logspine thornyheads	Retained					-								-	
			Discarded					-								-	
		Shortspine thornyheads	Retained					-								-	
			Discarded					-								-	
		Thornyheads	Retained					-								-	
			Discarded					-								-	
		Sablefish	Retained					-								-	
			Discarded					11	100%							11	100%
		Bocaccio	Retained					-								-	
			Discarded					-								-	
		Chilipepper	Retained					-								-	
			Discarded					-								-	
		Canary RKF	Retained					-								-	
			Discarded					-								-	
		Cowcod	Retained					-								-	
			Discarded					-								-	
		Widow RKF	Retained					-								-	
			Discarded					-								-	
		Yellowtail RKF	Retained					-								-	
			Discarded					-								-	
		Yelloweye RKF	Retained					-								-	
			Discarded					-								-	
		DarkBlotched RKF	Retained					-								-	
			Discarded					12	100%							12	100%
POP	Retained					-								-			
	Discarded					-								-			
Splitnose RKF	Retained					-								-			
	Discarded					-								-			
Black RKF	Retained					-								-			
	Discarded					-								-			
Lingcod	Retained					-								-			
	Discarded					-								-			
Pacific Halibut	Retained					-								-			
	Discarded					-								-			
Salmon	Retained					-								-			
	Discarded					-								-			
Shark, Skate	Retained					-								-			
	Discarded					7	100%							7	100%		
	Sum		Retained			-								-			
			Discarded			40	100%							40	100%		
SUM for Non GF Strategy			Retained	-		-		2,200		-		-		-		2,200	
			Discarded	8,251	100%	240	100%	2,695	55%	636	100%	79	100%	470	100%	12,371	85%

Appendix Table II. Continued.

Appendix Table II. Continued.																	
Strategy	Depth Range	Species	Landings (lbs)	Sep-Oct, 2001	D/(D+R)	Nov-Dec, 2001	D/(D+R)	Jan-Feb, 2002	D/(D+R)	Mar-Apr, 2002	D/(D+R)	May-Jun, 2002	D/(D+R)	Jul-Aug, 2002	D/(D+R)	Total	D/(D+R)
Whiting	0-100FM	Whiting	Retained											6,300		6,300	
			Discarded											60	1%	60	1%
		Arrowtooth flounder	Retained											400		400	
			Discarded											1,548	79%	1,548	79%
		Petrale sole	Retained											1,017		1,017	
			Discarded											173	15%	173	15%
		Dover sole	Retained											350		350	
			Discarded											5,238	94%	5,238	94%
		Logspine thornyheads	Retained											-		-	
			Discarded											-		-	
		Shortspine thornyheads	Retained											-		-	
			Discarded											-		-	
		Thornyheads	Retained											25		25	
			Discarded											-	0%	-	0%
		Sablefish	Retained											20		20	
			Discarded											2,011	99%	2,011	99%
		Bocaccio	Retained											-		-	
			Discarded											-		-	
		Chilipepper	Retained											-		-	
			Discarded											-		-	
		Canary RKF	Retained											28		28	
			Discarded											346	93%	346	93%
		Cowcod	Retained											-		-	
			Discarded											-		-	
		Widow RKF	Retained											-		-	
			Discarded											-		-	
		Yellowtail RKF	Retained											-		-	
			Discarded											28	100%	28	100%
		Yelloweye RKF	Retained											-		-	
			Discarded											7	100%	7	100%
		DarkBlotched RKF	Retained											-		-	
			Discarded											2	100%	2	100%
POP	Retained											-		-			
	Discarded											11		11	100%		
Splitnose RKF	Retained											-		-			
	Discarded											-		-			
Black RKF	Retained											-		-			
	Discarded											-		-			
Lingcod	Retained											85		85			
	Discarded											29	25%	29	25%		
Pacific Halibut	Retained											-		-			
	Discarded											59	100%	59	100%		
Salmon	Retained											-		-			
	Discarded											-		-			
Shark, Skate	Retained											380		380			
	Discarded											4,083	91%	4,083	91%		
	Sum		Retained									8,605		8,605			
			Discarded									13,593	61%	13,593	61%		
SUM for Whiting Strategy			Retained									8,605		8,605			
			Discarded									13,593	61%	13,593	61%		

Appendix Table II. Continued.

Strategy	Depth Range	Species	Landings (lbs)	Sep-Oct, 2001	D/(D+R)	Nov-Dec, 2001	D/(D+R)	Jan-Feb, 2002	D/(D+R)	Mar-Apr, 2002	D/(D+R)	May-Jun, 2002	D/(D+R)	Jul-Aug, 2002	D/(D+R)	Total	D/(D+R)
DTS	0-100FM	Whiting	Retained	-				-		-		3		150		153	
			Discarded	18,416	100%			-		29	100%	18,039	100%	16,186	99%	52,670	100%
		Arrowtooth flounder	Retained	3,780				-		1,074		1,062		2,895		8,810	
			Discarded	22,685	86%			5	100%	13,381	93%	31,739	97%	27,690	91%	95,500	92%
		Petrale sole	Retained	828				160		4,167		13,742		6,019		24,915	
			Discarded	2,139	72%			6	3%	1,220	23%	5,029	27%	940	14%	9,333	27%
		Dover sole	Retained	19,698				-		19,935		57,016		61,941		158,589	
			Discarded	6,574	25%			-		5,463	22%	5,227	8%	4,783	7%	22,047	12%
		Logspine thornyheads	Retained	-				-		-		-		-		-	
			Discarded	-				-		-		-		-		-	
		Shortspine thornyheads	Retained	1,473				240		250		10		454		2,427	
			Discarded	1,711	54%			-	0%	2	1%	2	18%	537	54%	2,252	48%
		Thornyheads	Retained	-				-		-		-		225		225	
			Discarded	-				-		-		-		-	0%	-	0%
		Sablefish	Retained	24,658				800		12,996		9,722		5,080		53,256	
			Discarded	4,338	15%			-	0%	7,818	38%	45,582	82%	24,403	83%	82,142	61%
		Bocaccio	Retained	-				-		-		23		-		23	
			Discarded	356	100%			-		15	100%	-	0%	-		370	94%
		Chilipepper	Retained	-				-		-		204		-		204	
			Discarded	110	100%			-		-		32	14%	-		142	41%
		Canary RKF	Retained	123				-		324		326		449		1,222	
			Discarded	134	52%			293	100%	429	57%	102	24%	120	21%	1,077	47%
		Cowcod	Retained	-				-		-		-		-		-	
			Discarded	-				-		-		-		-		-	
		Widow RKF	Retained	10				-		-		3		-		13	
			Discarded	-	0%			-		-		1	19%	-		1	4%
		Yellowtail RKF	Retained	50				-		865		1,375		282		2,573	
			Discarded	87	63%			47	100%	16	2%	0	0%	2	1%	152	6%
		Yelloweye RKF	Retained	-				-		-		5		-		5	
			Discarded	-				-		-		4	47%	-		4	47%
		DarkBlotched RKF	Retained	103				-		23		123		36		285	
			Discarded	855	89%			-		323	93%	232	65%	454	93%	1,865	87%
		POP	Retained	514				-		9		25		750		1,297	
			Discarded	86	14%			-		1	14%	2	6%	-	0%	89	6%
		Splitnose RKF	Retained	26				-		2		3		-		31	
			Discarded	920	97%			-		63	97%	41	94%	213	100%	1,236	98%
		Black RKF	Retained	-				-		-		-		-		-	
			Discarded	-				-		-		-		-		-	
		Lingcod	Retained	458				-		469		1,796		455		3,178	
			Discarded	1,209	73%			20	100%	1,129	71%	4,956	73%	3,012	87%	10,326	76%
		Pacific Halibut	Retained	-				-		-		-		-		-	
			Discarded	56	100%			-		584	100%	2,308		573	100%	3,521	100%
		Salmon	Retained	-				-		-		-		-		-	
			Discarded	-				5	100%	49	100%	12	100%	-		65	100%
		Shark, Skate	Retained	1,250				169		11,779		4,504		2,675		20,377	
			Discarded	13,642	92%			85	34%	16,599	58%	27,215	86%	19,880	88%	77,422	79%
	Sum		Retained	52,971				1,369		51,891		89,940		81,411		277,583	
			Discarded	73,318	58%			461	25%	47,120	48%	140,523	61%	98,792	55%	360,214	56%

Appendix Table II. Continued.

Strategy	Depth Range	Species	Landings (lbs)	Sep-Oct, 2001	D/(D+R)	Nov-Dec, 2001	D/(D+R)	Jan-Feb, 2002	D/(D+R)	Mar-Apr, 2002	D/(D+R)	May-Jun, 2002	D/(D+R)	Jul-Aug, 2002	D/(D+R)	Total	D/(D+R)
DTS	100-200Fm	Whiting	Retained	-				-		-		-		-		-	
			Discarded	27,232	100%			322	100%	6,718	100%	2,520	100%	786	100%	37,577	100%
		Arrowtooth flounder	Retained	3,234				1,070		12,655		2,331		3,634		22,924	
			Discarded	1,992	38%			10,238	91%	20,897	62%	7,880	77%	15,407	81%	56,413	71%
		Petrale sole	Retained	607				5,210		1,040		145		245		7,246	
			Discarded	82	12%			23	0%	74	7%	333	70%	7	3%	519	7%
		Dover sole	Retained	32,655				22,600		93,776		37,287		30,265		216,583	
			Discarded	2,961	8%			984	4%	13,105	12%	2,437	6%	2,710	8%	22,197	9%
		Logspine thornyheads	Retained	562				-		211		45		50		867	
			Discarded	-	0%			2	100%	72	26%	6	11%	-	0%	80	8%
		Shortspine thornyheads	Retained	1,037				1,252		2,221		941		2,449		7,901	
			Discarded	2,675	72%			2,486	66%	2,393	52%	55	6%	2,041	45%	9,650	55%
		Thornyheads	Retained	295				-		216		460		425		1,396	
			Discarded	4	1%			-		349	62%	1,147	71%	-	0%	1,501	52%
		Sablefish	Retained	9,316				990		6,297		5,156		5,660		27,419	
			Discarded	2,444	21%			6,475	87%	17,117	73%	6,127	54%	3,608	39%	35,772	57%
		Bocaccio	Retained	51				-		13		2		10		76	
			Discarded	-	0%			-		-	0%	11	84%	-	0%	11	13%
		Chilipepper	Retained	-				-		6		1		2		8	
			Discarded	18	100%			-		31	84%	74	99%	-	0%	123	94%
		Canary RKF	Retained	463				-		7		10		3		482	
			Discarded	4	1%			37	100%	88	93%	3	20%	-	0%	132	22%
		Cowcod	Retained	4				-		-		-		-		4	
			Discarded	-	0%			-		-		-		-		-	0%
		Widow RKF	Retained	20				-		36		5		19		79	
			Discarded	16	45%			-		-	0%	-	0%	-	0%	16	17%
		Yellowtail RKF	Retained	7				-		10		3		27		46	
			Discarded	-	0%			643	100%	800	99%	-	0%	2	7%	1,446	97%
		Yelloweye RKF	Retained	-				-		33		-		-		33	
			Discarded	4	100%			-		-	0%	-		-		4	10%
		DarkBlotched RKF	Retained	479				43		854		643		38		2,057	
			Discarded	391	45%			18	29%	845	50%	373	37%	1,569	98%	3,195	61%
		POP	Retained	850				562		2,264		90		929		4,694	
			Discarded	89	9%			45	7%	640	22%	1	1%	5	0%	779	14%
		Splitnose RKF	Retained	2				56		79		61		25		223	
			Discarded	1,762	100%			221	80%	2,106	96%	2,716	98%	1,805	99%	8,609	97%
		Black RKF	Retained	-				-		-		-		-		-	
			Discarded	-				-		-		-		-		-	
		Lingcod	Retained	1,206				-		72		518		1,019		2,815	
			Discarded	580	32%			506	100%	1,812	96%	428	45%	446	30%	3,770	57%
		Pacific Halibut	Retained	-				-		-		-		-		-	
			Discarded	177	100%			9	100%	1,270	100%	-		307	100%	1,763	100%
		Salmon	Retained	-				-		-		-		-		-	
			Discarded	-				66	100%	353	100%	-		-		419	100%
		Shark, Skate	Retained	7,577				533		3,070		3,182		2,650		17,012	
			Discarded	7,072	48%			7,951	94%	15,312	83%	8,952	74%	10,305	80%	49,593	74%
	Sum		Retained	58,363				32,316		122,859		50,877		47,449		311,864	
			Discarded	47,502	45%			30,025	48%	83,983	41%	33,063	39%	38,998	45%	233,570	43%

Appendix Table II. Continued.

Appendix Table II. Continued.																	
Strategy	Depth Range	Species	Landings (lbs)	Sep-Oct, 2001	D/(D+R)	Nov-Dec, 2001	D/(D+R)	Jan-Feb, 2002	D/(D+R)	Mar-Apr, 2002	D/(D+R)	May-Jun, 2002	D/(D+R)	Jul-Aug, 2002	D/(D+R)	Total	D/(D+R)
DTS	>200FM	Whiting	Retained	-				-		-		-		-		-	
			Discarded	10,891	100%			25,466	100%	13,872	100%	1,281	100%	125	100%	51,635	100%
		Arrowtooth flounder	Retained	90				17,749		20,855		20		135		38,850	
			Discarded	21	19%			7,716	30%	16,360	44%	13,183	100%	9	6%	37,290	49%
		Petrale sole	Retained	7				5,465		1,706		-		-		7,177	
			Discarded	-	0%			176	3%	37	2%	-		-		213	3%
		Dover sole	Retained	32,343				249,849		288,369		51,929		9,285		631,775	
			Discarded	21,660	40%			11,460	4%	24,076	8%	17,751	25%	1,240	12%	76,188	11%
		Logspine thornyheads	Retained	23,555				63,055		152,496		33,536		5,195		277,837	
			Discarded	10,734	31%			10,034	14%	26,967	15%	4,794	13%	774	13%	53,303	16%
		Shortspine thornyheads	Retained	4,986				17,990		33,041		9,514		1,977		67,509	
			Discarded	3,161	39%			5,233	23%	8,804	21%	1,190	11%	85	4%	18,474	21%
		Thornyheads	Retained	13,410				11,721		8,324		65		673		34,193	
			Discarded	3,550	21%			7,713	40%	23,439	74%	7,178	99%	2,884	81%	44,764	57%
		Sablefish	Retained	46,022				69,102		97,904		23,084		4,805		240,916	
			Discarded	1,478	3%			20,713	23%	41,592	30%	10,156	31%	1,990	29%	75,927	24%
		Bocaccio	Retained	-				-		-		-		-		-	
			Discarded	-				-		-		-		-		-	
		Chilipepper	Retained	-				-		-		3		-		3	
			Discarded	0	100%			-		-		-	0%	-		0	5%
		Canary RKF	Retained	-				-		-		-		-		-	
			Discarded	-				31	100%	-		-		-		31	100%
		Cowcod	Retained	-				-		-		-		-		-	
			Discarded	-				-		-		-		-		-	
		Widow RKF	Retained	-				-		-		-		-		-	
			Discarded	-				7	100%	2	100%	-		-		9	100%
		Yellowtail RKF	Retained	-				-		-		-		-		-	
			Discarded	-				-		7	100%	-		-		7	100%
		Yelloweye RKF	Retained	-				-		33		-		-		33	
			Discarded	-				4	100%	-	0%	3	100%	-		7	19%
		DarkBlotched RKF	Retained	8				13		103		88		71		283	
			Discarded	44	85%			393	97%	99	49%	503	85%	1	2%	1,040	79%
		POP	Retained	6				2,769		885		265		5		3,929	
			Discarded	19	78%			498	15%	537	38%	83	24%	-	0%	1,137	22%
		Splitnose RKF	Retained	-				32		28		1		5		66	
			Discarded	2	100%			469	94%	308	92%	33	96%	-	0%	812	92%
		Black RKF	Retained	-				-		-		-		-		-	
			Discarded	-				-		-		-		-		-	
		Lingcod	Retained	-				100		12		30		-		142	
			Discarded	-				59	37%	171	93%	-	0%	-		230	62%
		Pacific Halibut	Retained	-				-		-		-		-		-	
			Discarded	-				1,255	100%	1,003	100%	55	100%	-		2,313	100%
		Salmon	Retained	-				-		-		-		-		-	
			Discarded	-				16	100%	337	100%	-		-		352	100%
		Shark, Skate	Retained	966				3,187		4,453		641		680		9,926	
			Discarded	3,444	78%			23,380	88%	29,738	87%	12,997	95%	937	58%	70,496	88%
		Sum		Retained	121,393			441,032		608,209		119,175		22,830		1,312,639	
				Discarded	55,003	31%		114,623	21%	187,350	24%	69,207	37%	8,045	26%	434,228	25%
Sum for DTS Strategy		Retained	232,727			474,718		782,959		259,991		151,691		1,902,085			
		Discarded	175,823	43%		145,110	23%	318,452	29%	242,793	48%	145,834	49%	1,028,013	35%		

Appendix Table II. Continued.

Strategy	Depth Range	Species	Landings (lbs)	Sep-Oct, 2001	D/(D+R)	Nov-Dec, 2001	D/(D+R)	Jan-Feb, 2002	D/(D+R)	Mar-Apr, 2002	D/(D+R)	May-Jun, 2002	D/(D+R)	Jul-Aug, 2002	D/(D+R)	Total	D/(D+R)
Shelf RKF	0-100FM	Whiting	Retained	-		-				-		-		-		-	
			Discarded	4,097	100%	50,618	100%			-		414	100%	20,632	100%	75,761	100%
		Arrowtooth flounder	Retained	70		-				-		4		1,044		1,118	
			Discarded	348	83%	-				19	100%	11,489	100%	35,221	97%	47,077	98%
		Petrale sole	Retained	241		25				634		1,793		1,709		4,402	
			Discarded	8	3%	2	6%			97	13%	392	18%	1,767	51%	2,266	34%
		Dover sole	Retained	25		-				106		1,697		15		1,843	
			Discarded	972	97%	1	100%			18	15%	894	34%	3,390	100%	5,275	74%
		Logspine thornyheads	Retained	-		-				-		-		-		-	
			Discarded	-		-				-		-		-		-	
		Shortspine thornyheads	Retained	10		-				-		2		2		14	
			Discarded	-	0%	-				-		-	0%	-	0%	-	0%
		Thornyheads	Retained	-		-				-		-		-		-	
			Discarded	-		-				-		-		-		-	
		Sablefish	Retained	710		-				5		111		80		906	
			Discarded	1,497	68%	119	100%			672	99%	659	86%	2,056	96%	5,003	85%
		Bocaccio	Retained	-		-				-		98		60		158	
			Discarded	-		130	100%			10	100%	-	0%	-	0%	139	47%
		Chilipepper	Retained	-		-				-		-		150		150	
			Discarded	-		1	100%			-		-		368	71%	369	71%
		Canary RKF	Retained	86		-				226		1,193		1,862		3,368	
			Discarded	90	51%	2,702	100%			14	6%	106	8%	161	8%	3,073	48%
		Cowcod	Retained	-		-				-		-		-		-	
			Discarded	-		-				-		-		-		-	
		Widow RKF	Retained	31		194,866				-		583		127		195,607	
			Discarded	-	0%	38	0%			11	100%	83	12%	-	0%	132	0%
		Yellowtail RKF	Retained	3,652		141,669				6,662		30,172		37,659		219,815	
			Discarded	4	0%	32,874	19%			-	0%	3,602	11%	-	0%	36,479	14%
		Yelloweye RKF	Retained	-		-				-		14		8		22	
			Discarded	-		-				-		5	26%	-	0%	5	19%
		DarkBlotched RKF	Retained	-		32				-		200		2		234	
			Discarded	54	100%	56	64%			-		12	6%	179	99%	301	56%
		POP	Retained	94		-				-		17		21		132	
			Discarded	-	0%	12	100%			-		64	79%	-	0%	76	37%
		Splitnose RKF	Retained	-		-				-		2		-		2	
			Discarded	-		-				-		1	30%	125	100%	126	98%
		Black RKF	Retained	-		-				-		-		46		46	
			Discarded	-		-				-		-		-	0%	-	0%
		Lingcod	Retained	106		-				778		202		720		1,805	
			Discarded	923	90%	116	100%			52	6%	207	51%	2,828	80%	4,126	70%
		Pacific Halibut	Retained	-		-				-		-		-		-	
			Discarded	-		27	100%			91	100%	345	100%	-		463	100%
		Salmon	Retained	-		-				-		-		-		-	
			Discarded	4	100%	207	100%			11	100%	-		66	100%	288	100%
		Shark, Skate	Retained	15		10				2,920		400		-		3,345	
			Discarded	719	98%	3,263	100%			2,114	42%	1,482	79%	7,211	100%	14,790	82%
Sum			Retained	5,040		336,602				11,331		36,489		43,506		432,967	
			Discarded	8,715	63%	90,166	21%			3,109	22%	19,755	35%	74,004	63%	195,749	31%

Appendix Table II. Continued.

Strategy	Depth Range	Species	Landings (lbs)	Sep-Oct, 2001	D/(D+R)	Nov-Dec, 2001	D/(D+R)	Jan-Feb, 2002	D/(D+R)	Mar-Apr, 2002	D/(D+R)	May-Jun, 2002	D/(D+R)	Jul-Aug, 2002	D/(D+R)	Total	D/(D+R)
Shelf RKF	100-200FM	Whiting	Retained							-		-		-		-	
			Discarded							-		-		8	100%	8	100%
		Arrowtooth flounder	Retained							100		-		-		100	
			Discarded							519	84%	424	100%	1,208	100%	2,151	96%
		Petrale sole	Retained							10		39		70		119	
			Discarded							-	0%	39	50%	5	6%	44	27%
		Dover sole	Retained							150		95		-		245	
			Discarded							52	26%	92	49%	84	100%	229	48%
		Logspine thornyheads	Retained							-		-		-		-	
			Discarded							-		-		-		-	
		Shortspine thornyheads	Retained							-		16		-		16	
			Discarded							59	100%	44	73%	-		102	87%
		Thornyheads	Retained							-		-		-		-	
			Discarded							-		-		-		-	
		Sablefish	Retained							-		20		-		20	
			Discarded							34	100%	11	35%	6	100%	51	72%
		Bocaccio	Retained							-		-		-		-	
			Discarded							-		-		-		-	
		Chilipepper	Retained							-		-		-		-	
			Discarded							-		-		-		-	
		Canary RKF	Retained							375		-		4		379	
			Discarded							-	0%	-		-	0%	-	0%
		Cowcod	Retained							-		-		-		-	
			Discarded							-		-		-		-	
		Widow RKF	Retained							-		-		-		-	
			Discarded							-		-		-		-	
		Yellowtail RKF	Retained							-		127		-		127	
			Discarded							-		-	0%	-		-	0%
		Yelloweye RKF	Retained							-		-		-		-	
			Discarded							-		-		-		-	
		DarkBlotched RKF	Retained							21		-		-		21	
			Discarded							-	0%	60	100%	-		60	74%
		POP	Retained							15		24		-		39	
			Discarded							-	0%	-	0%	-		-	0%
		Splitnose RKF	Retained							-		-		-		-	
			Discarded							62	100%	18	100%	-		80	100%
		Black RKF	Retained							-		-		-		-	
			Discarded							-		-		-		-	
		Lingcod	Retained							200		34		-		234	
			Discarded							-	0%	15	31%	-		15	6%
		Pacific Halibut	Retained							-		-		-		-	
			Discarded							-		79	100%	-		79	100%
		Salmon	Retained							-		-		-		-	
			Discarded							-		-		-		-	
		Shark, Skate	Retained							80		45		-		125	
			Discarded							24	23%	31	41%	300	100%	356	74%
	Sum		Retained							951		399		74		1,423	
			Discarded							750	44%	814	67%	1,611	96%	3,175	69%
SUM for Shelf RKF Strategy			Retained	5,040		336,602				12,281		36,888		43,579		434,390	
			Discarded	8,715	63%	90,166	21%			3,859	24%	20,569	36%	75,615	63%	198,924	31%

Appendix Table II. Continued.

Strategy	Depth Range	Species	Landings (lbs)	Sep-Oct, 2001	D/(D+R)	Nov-Dec, 2001	D/(D+R)	Jan-Feb, 2002	D/(D+R)	Mar-Apr, 2002	D/(D+R)	May-Jun, 2002	D/(D+R)	Jul-Aug, 2002	D/(D+R)	Total	D/(D+R)
Slope RKF	0-100FM	Whiting	Retained	-								-				-	
			Discarded	1,919	100%							38	100%			1,957	100%
		Arrowtooth flounder	Retained	-								-				-	
			Discarded	45	100%							344	100%			389	100%
		Petrale sole	Retained	-								-				-	
			Discarded	31	100%							-				31	100%
		Dover sole	Retained	-								300				300	
			Discarded	43	100%							28	8%			71	19%
		Logspine thornyheads	Retained	-								-				-	
			Discarded	-								-				-	
		Shortspine thornyheads	Retained	-								-				-	
			Discarded	38	100%							7	100%			45	100%
		Thornyheads	Retained	-								-				-	
			Discarded	-								-				-	
		Sablefish	Retained	166								500				666	
			Discarded	-	0%							281	36%			281	30%
		Bocaccio	Retained	-								10				10	
			Discarded	3	100%							-				3	26%
		Chilipepper	Retained	-								51				51	
			Discarded	-								16	24%			16	24%
		Canary RKF	Retained	-								16				16	
			Discarded	10	100%							-	0%			10	38%
		Cowcod	Retained	-								-				-	
			Discarded	-								-				-	
		Widow RKF	Retained	-								30				30	
			Discarded	5	100%							-	0%			5	14%
		Yellowtail RKF	Retained	-								-				-	
			Discarded	203	100%							-				203	100%
		Yelloweye RKF	Retained	-								7				7	
			Discarded	3	100%							-	0%			3	27%
		DarkBlotched RKF	Retained	124								1,568				1,691	
			Discarded	-	0%							335	18%			335	17%
		POP	Retained	1,379												1,379	
			Discarded	233	14%											233	14%
		Splitnose RKF	Retained	-								2				2	
			Discarded	18	100%							204	99%			222	99%
		Black RKF	Retained	-								-				-	
			Discarded	-								-				-	
		Lingcod	Retained	-								60				60	
			Discarded	127	100%							422	88%			549	90%
		Pacific Halibut	Retained	-								-				-	
			Discarded	-								-				-	
		Salmon	Retained	-								-				-	
			Discarded	-								-				-	
		Shark, Skate	Retained	50								-				50	
			Discarded	-	0%							136	100%			136	73%
Sum			Retained	1,719								2,545				4,264	
			Discarded	2,678	61%							1,811	42%			4,489	51%

Appendix Table II. Continued.

Strategy	Depth Range	Species	Landings (lbs)	Sep-Oct, 2001	D/(D+R)	Nov-Dec, 2001	D/(D+R)	Jan-Feb, 2002	D/(D+R)	Mar-Apr, 2002	D/(D+R)	May-Jun, 2002	D/(D+R)	Jul-Aug, 2002	D/(D+R)	Total	D/(D+R)
Slope RKF	100-200FM	Whiting	Retained	-				-		-		-		-		-	
			Discarded	9,215	100%			1,086	100%	642	100%	53	100%	96	100%	11,092	100%
		Arrowtooth flounder	Retained	233				150		932		200		540		2,055	
			Discarded	221	49%			582	80%	498	35%	3,363	94%	41	7%	4,705	70%
		Petrale sole	Retained	50				850		108		20		30		1,057	
			Discarded	-	0%			58	6%	21	16%	2	9%	31	51%	111	10%
		Dover sole	Retained	450				574		620		1,645		30		3,319	
			Discarded	166	27%			26	4%	126	17%	1,512	48%	258	90%	2,089	39%
		Logspine thornyheads	Retained	-				-		-		-		-		-	
			Discarded	-				2		-		-		-		2	100%
		Shortspine thornyheads	Retained	34				30		325		-		24		413	
			Discarded	508	94%			141	82%	9	3%	344	100%	-	0%	1,002	71%
		Thornyheads	Retained	-				-		-		-		-		-	
			Discarded	-				-		105	100%	26	100%	-		131	100%
		Sablefish	Retained	390				242		217		345		-		1,194	
			Discarded	78	17%			1,259	84%	766	78%	1,320	79%	20	100%	3,442	74%
		Bocaccio	Retained	-				-		-		-		-		-	
			Discarded	-				47	100%	-		-		23	100%	70	100%
		Chilipepper	Retained	-				-		-		5		-		5	
			Discarded	-				873	100%	-		10	68%	-		883	99%
		Canary RKF	Retained	-				-		-		-		-		-	
			Discarded	-				50	100%	-		77	100%	-		127	100%
		Cowcod	Retained	-				-		-		-		-		-	
			Discarded	-				-		-		-		-		-	
		Widow RKF	Retained	-				-		-		2		-		2	
			Discarded	-				4	100%	15	100%	22	91%	16	100%	58	96%
		Yellowtail RKF	Retained	-				-		-		-		-		-	
			Discarded	-				46	100%	-		25	100%	-		71	100%
		Yelloweye RKF	Retained	-				-		-		-		-		-	
			Discarded	-				5	100%	-		-		-		5	100%
		DarkBlotched RKF	Retained	28				747		48		1,173		64		2,059	
			Discarded	1,163	98%			1,197	62%	-	0%	1,966	63%	-	0%	4,326	68%
		POP	Retained	1,066				6,870		4,569		14,044		2,167		28,715	
			Discarded	8	1%			448	6%	261	5%	1,978	12%	-	0%	2,696	9%
		Splitnose RKF	Retained	63				8		109		45		82		307	
			Discarded	2,171	97%			1,550	99%	300	73%	4,666	99%	0	0%	8,687	97%
		Black RKF	Retained	-				-		-		-		-		-	
			Discarded	-				-		-		-		-		-	
		Lingcod	Retained	54				-		-		60		20		134	
			Discarded	5	8%			291	100%	29	100%	181	75%	-	0%	505	79%
		Pacific Halibut	Retained	-				-		-		-		-		-	
			Discarded	-				60	100%	26	100%	11	100%	-		97	100%
		Salmon	Retained	-				-		-		-		-		-	
			Discarded	-				88	100%	-		-		-		88	100%
		Shark, Skate	Retained	-				1,045		418		272		-		1,735	
			Discarded	434	100%			945	47%	7,541	95%	2,069	88%	576	100%	11,566	87%
	Sum		Retained	2,366				10,516		7,345		17,810		2,957		40,995	
			Discarded	13,969	86%			8,757	45%	10,340	58%	17,626	50%	1,061	26%	51,753	56%

Appendix Table II. Continued.

Strategy	Depth Range	Species	Landings (lbs)	Sep-Oct, 2001	D/R	Nov-Dec, 2001	D/R	Jan-Feb, 2002	D/R	Mar-Apr, 2002	D/R	May-Jun, 2002	D/R	Jul-Aug, 2002	D/R	Total	D/R
Slope RKF	>200FM	Whiting	Retained	-												-	
			Discarded	310	100%											310	100%
		Arrowtooth flounder	Retained	-												-	
			Discarded	-												-	
		Petrale sole	Retained	202												202	
			Discarded	-	0%											-	0%
		Dover sole	Retained	-												-	
			Discarded	762	100%											762	100%
		Logspine thornyheads	Retained	-												-	
			Discarded	-												-	
		Shortspine thornyheads	Retained	-												-	
			Discarded	114	100%											114	100%
		Thornyheads	Retained	-												-	
			Discarded	-												-	
		Sablefish	Retained	-												-	
			Discarded	571	100%											571	100%
		Bocaccio	Retained	-												-	
			Discarded	-												-	
		Chilipepper	Retained	-												-	
			Discarded	-												-	
		Canary RKF	Retained	-												-	
			Discarded	-												-	
		Cowcod	Retained	-												-	
			Discarded	-												-	
		Widow RKF	Retained	-												-	
			Discarded	-												-	
		Yellowtail RKF	Retained	-												-	
			Discarded	-												-	
		Yelloweye RKF	Retained	-												-	
			Discarded	-												-	
		DarkBlotched RKF	Retained	-												-	
			Discarded	-												-	
		POP	Retained	-												-	
			Discarded	-												-	
		Splitnose RKF	Retained	-												-	
			Discarded	-												-	
		Black RKF	Retained	-												-	
			Discarded	-												-	
		Lingcod	Retained	-												-	
			Discarded	-												-	
		Pacific Halibut	Retained	-												-	
			Discarded	-												-	
		Salmon	Retained	-												-	
			Discarded	-												-	
		Shark, Skate	Retained	-												-	
			Discarded	66	100%											66	100%
	Sum		Retained	202												202	
			Discarded	1,823	90%											1,823	90%
Sum for Slope RKF Strategy				4,287				10,516		7,345		20,355		2,957		45,461	
				18,470	81%			8,757	45%	10,340	58%	19,437	49%	1,061	26%	58,065	56%

Appendix Table II. Continued.

Strategy	Depth Range	Species	Landings (lbs)	Sep-Oct, 2001	D/(D+R)	Nov-Dec, 2001	D/(D+R)	Jan-Feb, 2002	D/(D+R)	Mar-Apr, 2002	D/(D+R)	May-Jun, 2002	D/(D+R)	Jul-Aug, 2002	D/(D+R)	Total	D/(D+R)
Flatfish	0-100FM	Whiting	Retained	-		-		-		-		-		1,526		1,526	
			Discarded	69,349	100%	51,606	100%	380	100%	9,368	100%	130,175	100%	138,162	99%	399,041	100%
		Arrowtooth flounder	Retained	16,880		-		-		1,643		143,140		196,025		357,687	
			Discarded	15,052	47%	930	100%	317	100%	11,993	88%	85,362	37%	161,819	45%	275,472	44%
		Petrale sole	Retained	21,232		7,376		688		32,493		96,234		86,715		244,738	
			Discarded	2,996	12%	389	5%	91	12%	4,438	12%	23,003	19%	20,399	19%	51,316	17%
		Dover sole	Retained	5,181		-		-		4,975		41,720		22,545		74,421	
			Discarded	35,134	87%	2,599	100%	34	100%	7,106	59%	17,027	29%	25,180	53%	87,080	54%
		Logspine thornyheads	Retained	-		-		-		-		-		-		-	
			Discarded	-		-		-		-		-		-		-	
		Shortspine thornyheads	Retained	410		-		-		-		22		140		572	
			Discarded	924	69%	-		1	100%	15	100%	29	57%	240	63%	1,209	68%
		Thornyheads	Retained	122		-		-		-		-		-		122	
			Discarded	19	14%	-		-		-		-		-		19	14%
		Sablefish	Retained	5,390		-		-		492		4,446		2,877		13,204	
			Discarded	45,615	89%	1,151	100%	56	100%	17,176	97%	122,445	96%	251,332	99%	437,776	97%
		Bocaccio	Retained	25		-		-		113		45		1,687		1,871	
			Discarded	4	13%	2	100%	11	100%	705	86%	10	18%	-	0%	732	28%
		Chilipepper	Retained	-		-		-		-		7		-		7	
			Discarded	159	100%	-		4	100%	792	100%	273	97%	1,216	100%	2,444	100%
		Canary RKF	Retained	344		-		-		1,048		1,937		3,431		6,760	
			Discarded	487	59%	646	100%	639	100%	1,994	66%	559	22%	443	11%	4,768	41%
		Cowcod	Retained	-		-		-		-		-		-		-	
			Discarded	-		-		-		-		-		-		-	
		Widow RKF	Retained	100		4		-		118		16		50		288	
			Discarded	5	5%	-	0%	22	100%	113	49%	-	0%	1	1%	141	33%
		Yellowtail RKF	Retained	1,407		610		-		2,591		6,439		7,407		18,455	
			Discarded	16	1%	755	55%	3,290	100%	694	21%	1,640	20%	50	1%	6,445	26%
		Yelloweye RKF	Retained	17		-		-		17		-		81		116	
			Discarded	-	0%	-		115	100%	4	18%	-		19	19%	138	54%
		DarkBlotched RKF	Retained	47		-		-		-		9		15		70	
			Discarded	959	95%	-		10	100%	531	100%	767	99%	209	94%	2,476	97%
		POP	Retained	81		-		-		-		181		703		966	
			Discarded	2	2%	-		11	100%	15	100%	-	0%	3	0%	30	3%
		Splitnose RKF	Retained	4		-		-		-		-		-		4	
			Discarded	139	97%	31	100%	-		98	100%	11	100%	1,330	100%	1,609	100%
		Black RKF	Retained	214		-		-		-		-		-		214	
			Discarded	45	17%	714	100%	-		-		-		-		759	78%
		Lingcod	Retained	1,090		213		54		1,495		4,913		4,858		12,623	
			Discarded	4,077	79%	3,164	94%	638	92%	3,563	70%	9,287	65%	38,712	89%	59,442	82%
		Pacific Halibut	Retained	-		-		-		-		-		-		-	
			Discarded	45	100%	41	100%	151	100%	2,077	100%	5,720	100%	2,844	100%	10,879	100%
		Salmon	Retained	4		-		-		-		-		-		4	
			Discarded	193	98%	293	100%	150	100%	818	100%	91	100%	543	100%	2,089	100%
		Shark, Skate	Retained	48,363		20,972		14,963		74,419		55,980		43,108		257,805	
			Discarded	29,512	38%	24,634	54%	7,878	34%	70,243	49%	133,941	71%	133,206	76%	399,415	61%
	Sum		Retained	100,911		29,176		15,705		119,405		355,090		371,169		991,454	
			Discarded	204,733	67%	86,956	75%	13,799	47%	131,743	52%	530,342	60%	775,708	68%	1,743,281	64%

Appendix Table II. Continued.

Strategy	Depth Range	Species	Landings (lbs)	Sep-Oct, 2001	D/(D+R)	Nov-Dec, 2001	D/(D+R)	Jan-Feb, 2002	D/(D+R)	Mar-Apr, 2002	D/(D+R)	May-Jun, 2002	D/(D+R)	Jul-Aug, 2002	D/(D+R)	Total	D/(D+R)
Flatfish	100-200FM	Whiting	Retained	-		-		-		-		-		-		-	
			Discarded	15,505	100%	10,375	100%	2,595	100%	923	100%	5	100%	757	100%	30,160	100%
		Arrowtooth flounder	Retained	27,783		917		7,244		13,554		406		53,450		103,354	
			Discarded	2,451	8%	2,545	74%	12,475	63%	8,021	37%	1,447	78%	1,402	3%	28,341	22%
		Petrale sole	Retained	7,383		53,567		110,867		7,597		55		18		179,487	
			Discarded	237	3%	192	0%	168	0%	737	9%	1,183	96%	59	77%	2,575	1%
		Dover sole	Retained	1,330		1,314		7,030		7,809		332		7,765		25,580	
			Discarded	16,347	92%	5,422	80%	2,036	22%	4,162	35%	1,224	79%	539	6%	29,731	54%
		Logspine thornyheads	Retained	-		-		-		-		-		-		-	
			Discarded	43	100%	11	100%	26	100%	3	100%	33	100%	-		116	100%
		Shortspine thornyheads	Retained	1,106		-		455		320		2		329		2,211	
			Discarded	3,157	74%	69	100%	827	65%	703	69%	136	99%	58	15%	4,951	69%
		Thornyheads	Retained	-		-		10		847		-		1		858	
			Discarded	-		84	100%	466	98%	-	0%	-		-	0%	549	39%
		Sablefish	Retained	5,817		-		1,207		636		211		2,320		10,190	
			Discarded	7,299	56%	3,954	100%	8,179	87%	4,444	87%	892	81%	1,671	42%	26,439	72%
		Bocaccio	Retained	-		-		-		10		-		-		10	
			Discarded	-		-		156	100%	-	0%	-		-		156	94%
		Chilipepper	Retained	-		-		-		-		-		-		-	
			Discarded	5	100%	-		83	100%	1	100%	-		-		89	100%
		Canary RKF	Retained	5		-		-		170		-		5		179	
			Discarded	19	79%	16	100%	186	100%	211	55%	15	100%	-	0%	446	71%
		Cowcod	Retained	-		-		-		-		-		-		-	
			Discarded	-		-		-		7	100%	-		-		7	100%
		Widow RKF	Retained	3		-		-		13		-		-		15	
			Discarded	-	0%	24	100%	43	100%	8	39%	-		-		74	83%
		Yellowtail RKF	Retained	-		-		-		32		-		15		47	
			Discarded	-		-		10	100%	303	91%	-		-	0%	313	87%
		Yelloweye RKF	Retained	2		-		-		-		-		-		2	
			Discarded	-	0%	-		3	100%	5	100%	-		-		8	78%
		DarkBlotched RKF	Retained	88		11		345		6		61		37		548	
			Discarded	4,636	98%	5,623	100%	1,479	81%	794	99%	109	64%	48	57%	12,688	96%
		POP	Retained	695		-		1,690		1,645		226		3,574		7,830	
			Discarded	548	44%	187	100%	352	17%	176	10%	187	45%	-	0%	1,449	16%
		Splitnose RKF	Retained	2		-		14		1		5		49		71	
			Discarded	477	100%	25	100%	3,108	100%	981	100%	736	99%	62	56%	5,389	99%
		Black RKF	Retained	-		-		-		-		-		-		-	
			Discarded	-		-		-		-		-		-		-	
		Lingcod	Retained	50		37		19		684		124		50		965	
			Discarded	115	70%	228	86%	630	97%	1,200	64%	138	53%	160	76%	2,472	72%
		Pacific Halibut	Retained	-		-		-		-		-		-		-	
			Discarded	41	100%	278	100%	2,675	100%	342	100%	16	100%	-		3,352	100%
		Salmon	Retained	-		-		-		-		-		-		-	
			Discarded	23	100%	62	100%	308	100%	1,874	100%	-		-		2,267	100%
		Shark, Skate	Retained	1,713		1,125		5,735		9,052		31		300		17,956	
			Discarded	3,234	65%	4,026	78%	17,516	75%	8,958	50%	1,805	98%	11,134	97%	46,674	72%
Sum		Retained	45,975		56,971		134,616		42,374		1,453		67,914		349,302		
		Discarded	54,138	54%	33,118	37%	53,321	28%	33,851	44%	7,926	85%	15,892	19%	198,246	36%	

Appendix Table II. Continued.

Appendix Table II. Continued.																	
Strategy	Depth Range	Species	Landings (lbs)	Sep-Oct, 2001	D/(D+R)	Nov-Dec, 2001	D/(D+R)	Jan-Feb, 2002	D/(D+R)	Mar-Apr, 2002	D/(D+R)	May-Jun, 2002	D/(D+R)	Jul-Aug, 2002	D/(D+R)	Total	D/(D+R)
Flatfish	>200FM	Whiting	Retained					-						-		-	
		Whiting	Discarded					6,343	100%	1,130	100%			44	100%	7,517	100%
		Arrowtooth flounder	Retained					43,904		74,827				4,000		122,731	
		Arrowtooth flounder	Discarded					7,014	14%	14,281	16%			-	0%	21,294	15%
		Petrale sole	Retained					73,793		355				-		74,148	
		Petrale sole	Discarded					321	0%	4	1%			-		325	0%
		Dover sole	Retained					7,386		11,935				325		19,646	
		Dover sole	Discarded					3,872	34%	307	3%			13	4%	4,192	18%
		Logspine thornyheads	Retained					-		-				-		-	
		Logspine thornyheads	Discarded					6	100%	393	100%			-		399	100%
		Shortspine thornyheads	Retained					505		1,278				-		1,783	
		Shortspine thornyheads	Discarded					375	43%	1,222	49%			-		1,598	47%
		Thornyheads	Retained					-		25				1,053		1,078	
		Thornyheads	Discarded					7	100%	233	90%			136	11%	376	26%
		Sablefish	Retained					4,207		1,960				200		6,367	
		Sablefish	Discarded					6,450	61%	4,951	72%			1,235	86%	12,635	66%
		Bocaccio	Retained					-		-				-		-	
		Bocaccio	Discarded					18	100%	-				-		18	100%
		Chilipepper	Retained					-		-				-		-	
		Chilipepper	Discarded					-		1	100%			-		1	100%
		Canary RKF	Retained					34		-				-		34	
		Canary RKF	Discarded					5	13%	-				-		5	13%
		Cowcod	Retained					-		-				-		-	
		Cowcod	Discarded					-		-				-		-	
		Widow RKF	Retained					-		-				-		-	
		Widow RKF	Discarded					41	100%	68	100%			-		108	100%
		Yellowtail RKF	Retained					-		-				-		-	
		Yellowtail RKF	Discarded					11	100%	-				-		11	100%
		Yelloweye RKF	Retained					-		-				-		-	
		Yelloweye RKF	Discarded					-		-				-		-	
		DarkBlotched RKF	Retained					27		-				-		27	
		DarkBlotched RKF	Discarded					848	97%	35	100%			-		883	97%
		POP	Retained					1,587		-				-		1,987	
		POP	Discarded					198	11%	4	1%			-		202	9%
		Splitnose RKF	Retained					15		-				-		15	
		Splitnose RKF	Discarded					427	97%	606	100%			-		1,033	99%
		Black RKF	Retained					-		-				-		-	
		Black RKF	Discarded					-		-				-		-	
		Lingcod	Retained					70		20				-		90	
		Lingcod	Discarded					461	87%	-	0%			-		461	84%
		Pacific Halibut	Retained					-		-				-		-	
		Pacific Halibut	Discarded					575	100%	3,413	100%			-		3,988	100%
		Salmon	Retained					-		-				-		-	
		Salmon	Discarded					3,483	100%	95	100%			-		3,577	100%
		Shark, Skate	Retained					5,677		259				-		5,936	
		Shark, Skate	Discarded					9,508	63%	7,459	97%			529	100%	17,496	75%
			Sum	Retained				137,205		91,059				5,578		233,841	
			Discarded				39,962	23%	34,201	27%			1,957	26%	76,120	25%	
SUM for Shelf RKF Strategy			Retained	146,885		86,147		287,526		252,837		356,542		444,660		1,574,598	
			Discarded	258,871	64%	120,075	58%	107,082	27%	199,795	44%	538,267	60%	793,557	64%	2,017,648	56%
All strategies, depth ranges, and species				388,939		422,749		774,961		1,055,423		673,776		651,492		3,967,339	
				470,129	55%	210,481	33%	263,644	25%	533,082	34%	821,146	55%	1,030,131	61%	3,328,614	46%

Appendix Table III.

Retained (R) and discarded (D) landings (lbs) and percent of discard, D/(R+D), for the 23 selected species obtained from the observer data in South of 41°10', September, 2001 - August, 2002, by target strategy, depth range, and period. Non GF = Tow with no groundfish retained, no catch in the net or all catch was discarded.

Strategy	Depth Range	Species	Landings (lbs)	Sep-Oct, 2001	D/(D+R)	Nov-Dec, 2001	D/(D+R)	Jan-Feb, 2002	D/(D+R)	Mar-Apr, 2002	D/(D+R)	May-Jun, 2002	D/(D+R)	Jul-Aug, 2002	D/(D+R)	Total	D/(D+R)
Non GF	0-100FM	Whiting	Retained Discarded														
		Arrowtooth flounder	Retained Discarded														
		Petrale sole	Retained Discarded					- 97						- 3		- 100	
		Dover sole	Retained Discarded					- 98								- 98	
		Logspine thornyheads	Retained Discarded														
		Shortspine thornyheads	Retained Discarded														
		Thornyheads	Retained Discarded														
		Sablefish	Retained Discarded					- 591								- 591	
		Bocaccio	Retained Discarded														
		Chilipepper	Retained Discarded					- 29								- 29	
		Canary RKF	Retained Discarded														
		Cowcod	Retained Discarded														
		Widow RKF	Retained Discarded														
		Yellowtail RKF	Retained Discarded														
		Yelloweye RKF	Retained Discarded														
		DarkBlotched RKF	Retained Discarded														
		POP	Retained Discarded														
		Splitnose RKF	Retained Discarded														
		Black RKF	Retained Discarded														
		Lingcod	Retained Discarded					- 17								- 17	
		Pacific Halibut	Retained Discarded														
		Salmon	Retained Discarded	- 59				- -						- -		- 59	
		Shark, Skate	Retained Discarded	- 120				15,100 5,930						- 173		15,100 6,223	
		Sum for 0-100FM	Retained Discarded	- 179				15,100 6,762						- 176		15,100 7,117	

Appendix Table III. Continued

Strategy	Depth Range	Species	Landings (lbs)	Sep-Oct, 2001 D/(D+R)	Nov-Dec, 2001 D/(D+R)	Jan-Feb, 2002 D/(D+R)	Mar-Apr, 2002 D/(D+R)	May-Jun, 2002 D/(D+R)	Jul-Aug, 2002 D/(D+R)	Total	D/(D+R)
Non GF	100-200FM	Whiting	Retained Discarded				- 326 100%			- 326	100%
		Arrowtooth flounder	Retained Discarded								
		Petrale sole	Retained Discarded								
		Dover sole	Retained Discarded				- 3 100%			- 3	100%
		Logspine thornyheads	Retained Discarded				- 2 100%			- 2	100%
		Shortspine thornyheads	Retained Discarded				- 25 100%			- 25	100%
		Thornyheads	Retained Discarded								
		Sablefish	Retained Discarded				- 4 100%			- 4	100%
		Bocaccio	Retained Discarded								
		Chilipepper	Retained Discarded								
		Canary RKF	Retained Discarded								
		Cowcod	Retained Discarded								
		Widow RKF	Retained Discarded								
		Yellowtail RKF	Retained Discarded								
		Yelloweye RKF	Retained Discarded								
		DarkBlotched RKF	Retained Discarded								
		POP	Retained Discarded								
		Splitnose RKF	Retained Discarded				- 278 100%			- 278	100%
		Black RKF	Retained Discarded								
		Lingcod	Retained Discarded				- 635 100%			- 635	100%
		Pacific Halibut	Retained Discarded								
		Salmon	Retained Discarded								
		Shark, Skate	Retained Discarded								
	Sum for 100-200FM	Retained Discarded					- 1,273 100%			- 1,273	100%

Appendix Table III. Continued

Strategy	Depth Range	Species	Landings (lbs)	Sep-Oct, 2001	D/(D+R)	Nov-Dec, 2001	D/(D+R)	Jan-Feb, 2002	D/(D+R)	Mar-Apr, 2002	D/(D+R)	May-Jun, 2002	D/(D+R)	Jul-Aug 2002	D/(D+R)	Total	D/(D+R)	
Non GF	>200FM	Whiting	Retained							-		-		-		-		
			Discarded							297	100%	187	100%	-		484	100%	
		Arrowtooth flounder	Retained															
			Discarded															
		Petrale sole	Retained															
			Discarded															
		Dover sole	Retained							-			-		-		-	
			Discarded							11	100%		809	100%	820	100%		
		Logspine thornyheads	Retained							-			-		-		-	
			Discarded							-			230	100%	230	100%		
		Shortspine thornyheads	Retained							-			-		-		-	
			Discarded							75	100%		32	100%	108	100%		
		Thornyheads	Retained															
			Discarded															
		Sablefish	Retained							-			-		-		-	
			Discarded							11	100%		56	100%	67	100%		
		Bocaccio	Retained							-			-		-		-	
			Discarded							18	100%				18	100%		
		Chilipepper	Retained															
			Discarded															
		Canary RKF	Retained															
			Discarded															
		Cowcod	Retained															
			Discarded															
		Widow RKF	Retained							-			-		-		-	
			Discarded							3	100%				3	100%		
		Yellowtail RKF	Retained															
			Discarded															
		Yelloweye RKF	Retained															
			Discarded															
DarkBlotched RKF	Retained																	
	Discarded																	
POP	Retained																	
	Discarded																	
Splitnose RKF	Retained							-			-		-		-	-		
	Discarded							407	100%					407	100%			
Black RKF	Retained																	
	Discarded																	
Lingcod	Retained							-			-		-		-	-		
	Discarded							105	100%					105	100%			
Pacific Halibut	Retained							-			-		-		-	-		
	Discarded																	
Salmon	Retained																	
	Discarded																	
Shark, Skate	Retained											-		-		-		
	Discarded											40	100%	40	100%			
	Sum for >200FM	Retained						-		-		-		-		-		
		Discarded						928	100%	187	100%	1,167	100%	2,282	100%			
Sum for Non GF Strategy				-				15,100		-		-		0%		15,100		
				179	100%			6,762	31%	2,201	100%	187	100%	1,343	100%	10,672	41%	

Appendix Table III. Continued

Strategy	Depth Range	Species	Landings (lbs)	Sep-Oct, 2001	D/(D+R)	Nov-Dec, 2001	D/(D+R)	Jan-Feb, 2002	D/(D+R)	Mar-Apr, 2002	D/(D+R)	May-Jun, 2002	D/(D+R)	Jul-Aug, 2002	D/(D+R)	Total	D/(D+R)
DTS	0-100FM	Whiting	Retained							-		-				-	
			Discarded							26	100%	786	100%			812	100%
		Arrowtooth flounder	Retained							-		-				-	
			Discarded							-		69	100%			69	100%
		Petrale sole	Retained							26		200				226	
			Discarded							1	2%	-	0%			1	0%
		Dover sole	Retained							1		3,060				3,061	
			Discarded							-	0%	44	1%			44	1%
		Logspine thornyheads	Retained														
			Discarded														
		Shortspine thornyheads	Retained									300				300	
			Discarded									31	9%			31	9%
		Thornyheads	Retained									-				-	
			Discarded									14	100%			14	100%
		Sablefish	Retained							1,848		50				1,898	
			Discarded							969	34%	736	94%			1,706	47%
		Bocaccio	Retained							11		200				211	
			Discarded							2	12%	24	11%			25	11%
		Chilipepper	Retained							75		100				175	
			Discarded							-	0%	68	40%			68	28%
		Canary RKF	Retained									-				-	
			Discarded									24	100%			24	100%
		Cowcod	Retained							-		-				-	
			Discarded							3	100%	8	100%			11	100%
		Widow RKF	Retained							-		-				-	
			Discarded							-		0	100%			0	100%
		Yellowtail RKF	Retained														
			Discarded														
		Yelloweye RKF	Retained														
			Discarded														
		DarkBlotched RKF	Retained									-				-	
			Discarded									29	100%			29	100%
		POP	Retained														
			Discarded														
		Splitnose RKF	Retained									50				50	
			Discarded									16	24%			16	24%
		Black RKF	Retained														
			Discarded														
		Lingcod	Retained							-		20				20	
			Discarded							18	100%	39	66%			58	74%
		Pacific Halibut	Retained														
			Discarded														
		Salmon	Retained														
			Discarded														
		Shark, Skate	Retained							149		20				169	
			Discarded							461	76%	215	91%			676	80%
		Sum for 0-100FM	Retained							2,109		4,000				6,109	
			Discarded							1,480	41%	2,104	34%			3,584	37%

Appendix Table III. Continued

Appendix	Table III: Continued																
Strategy	Depth Range	Species	Landings (lbs)	Sep-Oct, 2001	D/(D+R)	Nov-Dec, 2001	D/(D+R)	Jan-Feb, 2002	D/(D+R)	Mar-Apr, 2002	D/(D+R)	May-Jun, 2002	D/(D+R)	Jul-Aug, 2002	D/(D+R)	Total	D/(D+R)
DTS	100-200FM	Whiting	Retained	-						-		-		-		-	
			Discarded	8,760	100%					1,486	100%	1,717	100%	282	100%	12,245	100%
		Arrowtooth flounder	Retained							20	100%	147	100%	82	100%	248	100%
			Discarded							-		-		-		-	
		Petrale sole	Retained	48						75		155				278	
			Discarded	-	0%					2	2%	1	0%			2	1%
		Dover sole	Retained	-						8,500		10,648		8,370		27,518	
			Discarded	951	100%					852	9%	76	1%	432	5%	2,311	8%
		Logspine thornyheads	Retained	-						12		189		50		251	
			Discarded	79	100%					17		6	3%	-	0%	102	29%
		Shortspine thornyheads	Retained							307		597		305		1,209	
			Discarded							206	40%	52	8%	92	23%	350	22%
		Thornyheads	Retained														
			Discarded														
		Sablefish	Retained	745						1,227		1,069		1,498		4,539	
			Discarded	4,895	87%					216	15%	530	33%	130	8%	5,772	56%
		Bocaccio	Retained									160		-		160	
			Discarded									-	0%	139	100%	139	47%
		Chilipepper	Retained	140								527		-		666	
			Discarded	-	0%							48	8%	131	100%	179	21%
		Canary RKF	Retained									75				75	
			Discarded									-	0%			-	0%
		Cowcod	Retained									-				-	
			Discarded									31	100%			31	100%
		Widow RKF	Retained							-				-		-	
			Discarded							3	100%			9	100%	12	100%
		Yellowtail RKF	Retained														
			Discarded														
		Yelloweye RKF	Retained														
			Discarded														
DarkBlotched RKF	Retained							-		387		35		422			
	Discarded							1	100%	3	1%	46	57%	50	11%		
POP	Retained							-		2		3		5			
	Discarded							-		-		-		-			
Splitnose RKF	Retained	256						20		19		252		548			
	Discarded	2,398	90%					173	90%	193	91%	442	64%	3,206	85%		
Black RKF	Retained							-		-		-		-			
	Discarded							-		-		-		-			
Lingcod	Retained							-		70		-		70			
	Discarded							64	100%	28	29%	173	100%	266	79%		
Pacific Halibut	Retained																
	Discarded																
Salmon	Retained																
	Discarded																
Shark, Skate	Retained							1,050		-		-		1,050			
	Discarded							2,102	67%	3,516	100%	727	100%	6,346	86%		
	Sum for 100-200FM	Retained		1,189				11,191		13,898		10,513		36,791			
		Discarded		17,084	93%			5,142	31%	6,347	31%	2,684	20%	31,258	46%		

Appendix Table III. Continued

Strategy	Depth Range	Species	Landings (lbs)	Sep-Oct, 2001	D/(D+R)	Nov-Dec, 2001	D/(D+R)	Jan-Feb, 2002	D/(D+R)	Mar-Apr, 2002	D/(D+R)	May-Jun, 2002	D/(D+R)	Jul-Aug, 2002	D/(D+R)	Total	D/(D+R)	
DTS	>200FM	Whiting	Retained	-				-		-		-		-		-		
			Discarded	1,966	100%			1,191	100%	5,754	100%	3,631	100%	5,479	100%	18,021	100%	
		Arrowtooth flounder	Retained												350		350	
			Discarded						92	100%	2	100%	222	39%	315	47%		
		Petrale sole	Retained					1		162		20		5		188		
			Discarded					-	0%	-	0%	-	0%	16	76%	16	8%	
		Dover sole	Retained	13,500				50,519		100,266		75,904		238,145		478,334		
			Discarded	4,410	25%			41,277	45%	26,521	21%	6,603	8%	13,422	5%	92,233	16%	
		Logspine thornyheads	Retained	8,252				23,833		33,693		33,682		88,438		187,898		
			Discarded	442	5%			4,910	17%	15,497	32%	4,575	12%	10,927	11%	36,352	16%	
		Shortspine thornyheads	Retained	2,805				9,471		11,267		7,222		21,934		52,699		
			Discarded	-	0%			5,809	38%	7,161	39%	146	2%	3,274	13%	16,389	24%	
		Thornyheads	Retained					-		-		8,489		100		8,589		
			Discarded					4,707	100%	5,240	100%	6,131	42%	3,212	97%	19,290	69%	
		Sablefish	Retained	3,002				9,902		20,210		14,049		43,694		90,857		
			Discarded	2,137	42%			12,503	56%	20,690	51%	6,203	31%	21,418	33%	62,951	41%	
		Bocaccio	Retained															
			Discarded															
		Chilipepper	Retained							-		-						
			Discarded							0	100%		9	100%			9	100%
		Canary RKF	Retained															
			Discarded															
		Cowcod	Retained															
			Discarded															
		Widow RKF	Retained															
			Discarded															
		Yellowtail RKF	Retained															
			Discarded															
		Yelloweye RKF	Retained															
			Discarded															
		DarkBlotched RKF	Retained							-				31		2		
			Discarded								1	100%		3	8%	18	92%	
		POP	Retained											-		5		
			Discarded													2	31%	
		Splitnose RKF	Retained					24		451				317		92		
			Discarded					57	70%	471	51%		8	3%	22	19%	558	39%
		Black RKF	Retained															
			Discarded															
		Lingcod	Retained											-				
			Discarded											3	100%		3	100%
		Pacific Halibut	Retained															
			Discarded															
		Salmon	Retained													-		
			Discarded												8	100%	8	100%
		Shark, Skate	Retained		-			69		2,613		350		-				
			Discarded		2,597	100%		10,099	99%	11,593	82%	6,855	95%	17,954	100%			
		Sum for >200FM	Retained		27,559			93,820		168,663		140,064		392,764		822,869		
		Discarded		11,553	30%		80,554	46%	93,019	36%	34,167	20%	75,974	16%	295,266	26%		
Sum for DTS Strategy				28,747				93,820		181,963		157,962		403,277		865,769		
				28,637	50%			80,554	46%	99,641	35%	42,618	21%	78,658	16%	330,108	28%	

Appendix Table III. Continued

Strategy	Depth Range	Species	Landings (lbs)	Sep-Oct, 2001	D/(D+R)	Nov-Dec, 2001	D/(D+R)	Jan-Feb, 2002	D/(D+R)	Mar-Apr, 2002	D/(D+R)	May-Jun, 2002	D/(D+R)	Jul-Aug, 2002	D/(D+R)	Total	D/(D+R)
Shelf RKF	0-100FM	Whiting	Retained	-						-		-				-	
			Discarded	254	100%					971	100%	28,671	100%			29,896	100%
		Arrowtooth flounder	Retained							-		-				-	
			Discarded							56	100%	6	100%			62	100%
		Petrale sole	Retained	250		700		390		265		526				2,130	
			Discarded	2	1%	-	0%	36	8%	27	9%	3	1%			68	3%
		Dover sole	Retained	-				-		592		-				592	
			Discarded	5	100%			213	100%	35	6%	2,535	100%			2,787	82%
		Logspine thornyheads	Retained														
			Discarded														
		Shortspine thornyheads	Retained	-												-	
			Discarded	4	100%											4	100%
		Thornyheads	Retained														
			Discarded														
		Sablefish	Retained	-		-		1,805		300		1,720				3,825	
			Discarded	159	100%	22	100%	7,404	80%	524	64%	24,255	93%			32,364	89%
		Bocaccio	Retained	-		-		300		492		400				1,192	
			Discarded	66	100%	246	100%	329	52%	74	13%	4,430	92%			5,146	81%
		Chilipepper	Retained	300		1,000		1,908		7,133		22,359				32,701	
			Discarded	66	18%	1,026	51%	10,882	85%	1,593	18%	9,338	29%			22,905	41%
		Canary RKF	Retained	25						91						116	
			Discarded	1	5%					-	0%					1	1%
		Cowcod	Retained							-		-				-	
			Discarded							12	100%	186	100%			198	100%
		Widow RKF	Retained							6						6	
			Discarded							-	0%					-	0%
		Yellowtail RKF	Retained														
			Discarded														
		Yelloweye RKF	Retained							1						1	
			Discarded							-	0%					-	0%
		DarkBlotched RKF	Retained							-		18				18	
			Discarded							1	100%	62	78%			63	78%
		POP	Retained														
			Discarded														
		Splitnose RKF	Retained					-				-				-	
			Discarded					134	100%			480	100%			615	100%
		Black RKF	Retained														
			Discarded														
		Lingcod	Retained	80		-		90		1,569		120				1,859	
			Discarded	21	21%	21	100%	232	72%	790	33%	467	80%			1,532	45%
		Pacific Halibut	Retained														
			Discarded														
		Salmon	Retained							-						-	
			Discarded							10						21	100%
		Shark, Skate	Retained	-		-		132		281		750				1,163	
			Discarded	193	100%	80	100%	2,895	96%	1,926	87%	17,166	96%			22,260	95%
		Sum for 0-100FM	Retained	655		1,700		4,625		10,729		25,892				43,602	
			Discarded	773	54%	1,406	45%	22,125	83%	6,019	36%	87,599	77%			117,922	73%

Appendix Table III. Continued

Strategy	Depth Range	Species	Landings (lbs)	Sep-Oct, 2001	D/(D+R)	Nov-Dec, 2001	D/(D+R)	Jan-Feb, 2002	D/(D+R)	Mar-Apr, 2002	D/(D+R)	May-Jun, 2002	D/(D+R)	Jul-Aug, 2002	D/(D+R)	Total	D/(D+R)
Shelf RKF	100-200FM	Whiting	Retained	-				-		-		40				40	
			Discarded	226	100%			648	100%	274	100%	2,058	98%			3,207	99%
		Arrowtooth flounder	Retained					61	100%	25	100%	38	100%			124	100%
			Discarded					230		45		300				1,227	
		Petrale sole	Retained	652				8	3%	8	16%	9	3%			28	2%
			Discarded	3	0%												
		Dover sole	Retained	-				-				30				30	
			Discarded	28	100%			142	100%			335	92%			505	94%
		Logspine thornyheads	Retained	-				-		-		-				-	
			Discarded	-				-		1	100%	-				1	100%
		Shortspine thornyheads	Retained	-				6		-		300				306	
			Discarded	10	100%			8	58%	-		-	0%			18	6%
		Thornyheads	Retained	-				-		-		-				-	
			Discarded	-				-		-		68	100%			68	100%
		Sablefish	Retained	-				1,400		-		-				1,400	
			Discarded	278	100%			1,633	54%	3	100%	28	100%			1,942	58%
		Bocaccio	Retained	-				232		-		400				632	
			Discarded	119	100%			-	0%	649	100%	557	58%			1,326	68%
		Chilipepper	Retained	2,636				7,500		541		1,250				11,927	
			Discarded	221	8%			1,265	14%	1,201	69%	231	16%			2,918	20%
		Canary RKF	Retained	9				35				4				48	
			Discarded	-	0%			-	0%			-	0%			-	0%
		Cowcod	Retained	-				-		-		-				-	
			Discarded	1	100%			1	100%	230	100%	35	100%			268	100%
		Widow RKF	Retained					110		-		91				201	
			Discarded					-	0%	28	100%	-	0%			28	12%
		Yellowtail RKF	Retained														
			Discarded														
		Yelloweye RKF	Retained									-				-	
			Discarded									1	100%			1	100%
		DarkBlotched RKF	Retained	2								-				2	
			Discarded	-	0%							13	100%			13	89%
		POP	Retained														
			Discarded														
		Splitnose RKF	Retained	26				25		11		50				112	
			Discarded	101	80%			287	92%	25	70%	24	32%			437	80%
		Black RKF	Retained														
			Discarded														
		Lingcod	Retained	26				100		-		130				256	
			Discarded	94	78%			92	48%	678	100%	-	0%			864	77%
		Pacific Halibut	Retained														
			Discarded														
		Salmon	Retained					-								-	
			Discarded					22	100%							22	100%
		Shark, Skate	Retained	2,144				-		-		30				2,174	
			Discarded	5,320	71%			792	100%	189	100%	1,387	98%			7,689	78%
		Sum for 100-200FM	Retained	5,495				9,637		597		2,625				18,354	
			Discarded	6,402	54%			4,960	34%	3,312	85%	4,784	65%			19,458	51%
Sum for Shelf RKF Strategy				6,150		1,700		14,262		11,326		28,518				61,955	
				7,174	54%	1,406	45%	27,085	66%	9,332	45%	92,383	76%			137,380	69%

Appendix Table III. Continued

Strategy	Depth Range	Species	Landings (lbs)	Sep-Oct, 2001	D/(D+R)	Nov-Dec, 2001	D/(D+R)	Jan-Feb, 2002	D/(D+R)	Mar-Apr, 2002	D/(D+R)	May-Jun, 2002	D/(D+R)	Jul-Aug, 2002	D/(D+R)	Total	D/(D+R)
Slope RKF	100-200FM	Whiting	Retained	-		-		-		-		-		-		-	
			Discarded			2,743	100%	2,546	100%	2,325	100%	500	100%	79	100%	8,193	100%
		Arrowtooth flounder	Retained					-		-		3				3	
			Discarded					0	100%	9	100%	0	9%			10	77%
		Petrale sole	Retained	120		1,200		2,059		-		2		8		3,388	
			Discarded	-	0%	-	0%	34	2%	26	100%	-	0%	2	19%	62	2%
		Dover sole	Retained	-		-		358		-		105		43		507	
			Discarded	10	100%	3,137	100%	247	41%	215	100%	666	86%	35	45%	4,310	89%
		Logspine thornyheads	Retained									-				-	
			Discarded									0	100%			0	100%
		Shortspine thornyheads	Retained			-		79		-		8				87	
			Discarded			494	100%	126	62%	159	100%	21	72%			800	90%
		Thornyheads	Retained			-				-				15		15	
			Discarded			151	100%			126	100%			-	0%	277	95%
		Sablefish	Retained	-		-		570		80		206		20		875	
			Discarded	44	100%	5,008	100%	1,003	64%	674	89%	57	22%	283	93%	7,069	89%
		Bocaccio	Retained			-		-		-		19				19	
			Discarded			828	100%	125	100%	266	100%	-	0%			1,220	98%
		Chilipepper	Retained					12				10		-		22	
			Discarded					262	96%	1,111	100%	21	68%	292	100%	1,687	99%
		Canary RKF	Retained									-				-	
			Discarded									3	100%			3	100%
		Cowcod	Retained					-				-		-		-	
			Discarded					1	100%			26	100%	5	100%	32	100%
		Widow RKF	Retained					-		-						-	
			Discarded					4	100%	56	100%	-		13	100%	73	100%
		Yellowtail RKF	Retained														
			Discarded														
		Yelloweye RKF	Retained									-				-	
			Discarded									14	100%			14	100%
		DarkBlotched RKF	Retained	11				16		-		36		97		161	
			Discarded	-	0%			145	90%	17	100%	5	12%	-	0%	166	51%
		POP	Retained													-	
			Discarded													34	100%
		Splitnose RKF	Retained	118		5,350		2,902		3,768		5,527		300		17,965	
			Discarded	-	0%	170	3%	629	18%	6,404	63%	1,424	20%	21	6%	8,648	32%
		Black RKF	Retained														
			Discarded														
		Lingcod	Retained	-		-		-		50		5				55	
			Discarded	49	100%	4,521	100%	433	100%	414	89%	36	88%			5,453	99%
		Pacific Halibut	Retained														
			Discarded														
		Salmon	Retained					-		-						-	
			Discarded					8	100%	5	100%					12	100%
		Shark, Skate	Retained	250		-		-		-		-		-		250	
			Discarded	-	0%	2,379	100%	4,012	100%	454	100%	683	100%	81	100%	7,609	97%
		Sum for 100-200FM	Retained	500		6,550		5,995		3,898		5,921		484		23,348	
			Discarded	103	17%	19,432	75%	9,575	61%	12,261	76%	3,491	37%	811	63%	45,673	66%

Appendix Table III. Continued

Appendix Table 11: Continued																			
Strategy	Depth Range	Species	Landings (lbs)	Sep-Oct, 2001	D/(D+R)	Nov-Dec, 2001	D/(D+R)	Jan-Feb, 2002	D/(D+R)	Mar-Apr, 2002	D/(D+R)	May-Jun, 2002	D/(D+R)	Jul-Aug, 2002	D/(D+R)	Total	D/(D+R)		
Slope RKF	>200FM	Whiting	Retained									-		-		-			
		Discarded										1,532	100%	38	100%	1,570	100%		
		Arrowtooth flounder	Retained																
		Discarded																	
		Petrale sole	Retained										1				1		
		Discarded											-	0%			-	0%	
		Dover sole	Retained										50		-		50		
		Discarded											69	58%	271	100%	340	87%	
		Logspine thornyheads	Retained										-		5		5		
		Discarded											7	100%	-	0%	7	57%	
		Shortspine thornyheads	Retained										-		10		10		
		Discarded											2	100%	-	0%	2	19%	
		Thornyheads	Retained										2				2		
		Discarded											6	80%			6	80%	
		Sablefish	Retained										12		15		27		
		Discarded											19	61%	-	0%	19	41%	
		Bocaccio	Retained																
		Discarded																	
		Chilipepper	Retained											2				2	
		Discarded												2	56%			2	56%
		Canary RKF	Retained																
		Discarded																	
		Cowcod	Retained																
		Discarded																	
		Widow RKF	Retained																
		Discarded																	
		Yellowtail RKF	Retained																
		Discarded																	
Yelloweye RKF	Retained																		
Discarded																			
DarkBlotched RKF	Retained											44				44			
Discarded												1	1%			1	1%		
POP	Retained																		
Discarded																			
Splitnose RKF	Retained											12,009				12,009			
Discarded												183	1%			183	1%		
Black RKF	Retained																		
Discarded																			
Lingcod	Retained											-				-			
Discarded												3	100%			3	100%		
Pacific Halibut	Retained																		
Discarded																			
Salmon	Retained																		
Discarded																			
Shark, Skate	Retained											-		-		-			
Discarded												485	100%	1,005	100%	1,490	100%		
Sum for >200FM				Retained								12,120		30		12,150			
				Discarded								2,310	16%	1,313	98%	3,623	23%		
Sum for Slope RKF strategy					500	6,550	5,995	3,898		18,040		514		35,497					
					103	17%	19,432	75%	9,575	61%	12,261	76%	5,801	24%	2,124	81%	49,296	58%	

Appendix Table III. Continued

Strategy	Depth Range	Species	Landings (lbs)	Sep-Oct, 2001	D/(D+R)	Nov-Dec, 2001	D/(D+R)	Jan-Feb, 2002	D/(D+R)	Mar-Apr, 2002	D/(D+R)	May-Jun, 2002	D/(D+R)	Jul-Aug, 2002	D/(D+R)	Total	D/(D+R)
FlatFish	0-100FM	Whiting	Retained	-		-		-		-		-		-		-	
			Discarded	3,084	100%	1,398	100%	154	100%	1,165	100%	558	100%			6,360	100%
		Arrowtooth flounder	Retained	-		-		45	100%	-		28	100%	-		284	100%
			Discarded	211	100%	-		-		-		-		-		-	
		Petrale sole	Retained	9,507		2,140		1,256		615		794				14,311	
			Discarded	792	8%	203	9%	348	22%	19	3%	11	1%			1,374	9%
		Dover sole	Retained	-		-		-		55		70				125	
			Discarded	350	100%	146	100%	192	100%	6	10%	443	86%			1,137	90%
		Logspine thornyheads	Retained														
			Discarded														
		Shortspine thornyheads	Retained	-				-								-	
			Discarded	14	100%			2	100%							15	100%
		Thornyheads	Retained														
			Discarded														
		Sablefish	Retained	275		-		265		128		97				765	
			Discarded	2,347	90%	2,268	100%	1,006	79%	423	77%	90	48%			6,133	89%
		Bocaccio	Retained	25		-		277		37		87				426	
			Discarded	1,301	98%	3,324	100%	19	7%	44	55%	3	3%			4,692	92%
		Chilipepper	Retained	3,170		1,365		281		57		532				5,404	
			Discarded	941	23%	5,611	80%	752	73%	30	35%	234	31%			7,568	58%
		Canary RKF	Retained	163		-		50				15				228	
			Discarded	24		3	100%	2	5%			3	18%			33	13%
		Cowcod	Retained	-		-				-		-				-	
			Discarded	4	100%	64	100%			9	100%	2	100%			79	100%
		Widow RKF	Retained	2		-										2	
			Discarded	-	0%	9	100%									9	79%
		Yellowtail RKF	Retained					46								46	
			Discarded					3	6%							3	6%
		Yelloweye RKF	Retained			17										17	
			Discarded			-										-	0%
		DarkBlotched RKF	Retained	-		-						-				-	
			Discarded	17	100%	13	100%					2	100%			32	100%
		POP	Retained														
			Discarded														
		Splitnose RKF	Retained					-		-						-	
			Discarded					49	100%	4	100%					53	100%
		Black RKF	Retained														
			Discarded														
		Lingcod	Retained	744		22		293		353		67				1,479	
			Discarded	2,215	75%	2,831	99%	684	70%	302	46%	146	68%			6,178	81%
		Pacific Halibut	Retained														
			Discarded														
		Salmon	Retained	-		-		33 *		-		-				33 *	
			Discarded	58	100%	12	100%	36	52%	14	100%	7	100%			127	79%
		Shark, Skate	Retained	1,189		189		3,162		1,018		150				5,708	
			Discarded	42,379	97%	13,438	99%	15,594	83%	5,684	85%	3,348	96%			80,442	93%
		Sum for 0-100fm	Retained	15,074		3,733		5,662		2,263		1,811				28,544	
			Discarded	53,738	78%	29,319	89%	18,886	77%	7,701	77%	4,874	73%			114,518	80%

*: The vessel has salmon permit.

Appendix Table III. Continued

Strategy	Depth Range	Species	Landings (lbs)	Sep-Oct, 2001	D/(D+R)	Nov-Dec, 2001	D/(D+R)	Jan-Feb, 2002	D/(D+R)	Mar-Apr, 2002	D/(D+R)	May-Jun, 2002	D/(D+R)	Jul-Aug, 2002	D/(D+R)	Total	D/(D+R)
Flatfish	100-200FM	Whiting	Retained	83		-		-		-		-		-		83	
			Discarded	2,709	97%	2,145	100%	1,075	100%	272	100%			215	100%	6,415	99%
		Arrowtooth flounder	Retained	-		-		-		-		-		-		-	
			Discarded	159	100%	4	100%	341	100%	106	100%			26	100%	636	100%
		Petrale sole	Retained	28,865		2,760		1,151		700				1,200		34,676	
			Discarded	-	0%	25	1%	-	0%	19	3%			10	1%	55	0%
		Dover sole	Retained	-		-		1		-				100		101	
			Discarded	91	100%	964	100%	2	67%	63	100%			189	65%	1,308	93%
		Logspine thornyheads	Retained														
			Discarded														
		Shortspine thornyheads	Retained	1		-		-		-				-		1	
			Discarded	34	97%	110	100%	85	100%	4	100%			7	100%	240	100%
		Thornyheads	Retained			-										-	
			Discarded			9	100%									9	100%
		Sablefish	Retained	564		-		270		-				6		841	
			Discarded	2,316	80%	7,044	100%	704	72%	152	100%			287	98%	10,503	93%
		Bocaccio	Retained	252		-		50						-		302	
			Discarded	221	47%	294	100%	-	0%					5	100%	520	63%
		Chilipepper	Retained	578		-		335		60				-		973	
			Discarded	59	9%	417	100%	523	61%	6,008	99%			2	100%	7,009	88%
		Canary RKF	Retained	-				6		-				-		6	
			Discarded	7	100%			-	0%	53	100%			37	100%	97	94%
		Cowcod	Retained	-		-		-		-				-		-	
			Discarded	17	100%	91	100%			54	100%			-		163	100%
		Widow RKF	Retained	2		40		7						-		49	
			Discarded	-	0%	-	0%	-	0%	41	100%			10	100%	51	51%
		Yellowtail RKF	Retained														
			Discarded														
		Yelloweye RKF	Retained							-				-		-	
			Discarded							24	100%			8	100%	32	100%
		DarkBlotched RKF	Retained	0				-		51				-		51	
			Discarded	16	98%			113	100%	42	46%			-		171	77%
		POP	Retained														
			Discarded														
		Splitnose RKF	Retained	1		1,000		5		28				-		1,033	
			Discarded	228	100%	87	8%	595	99%	78	74%			2	100%	991	49%
		Black RKF	Retained														
			Discarded														
		Lingcod	Retained	733		-		71		-				-		805	
			Discarded	556	43%	593	100%	108	60%	174	100%			89	100%	1,519	65%
		Pacific Halibut	Retained					-								-	
			Discarded					39	100%							39	100%
		Salmon	Retained			-		-						-		-	
			Discarded			13	100%	53	100%					22	100%	87	100%
		Shark, Skate	Retained	10,423		-		-		-				-		10,423	
			Discarded	14,122	58%	4,400	100%	4,260	100%	233	100%			873	100%	23,888	70%
	Sum for 100-200FM	Retained		41,503		3,800		1,896		839				1,306		49,344	
		Discarded		20,534	33%	16,197	81%	7,897	81%	7,323	90%			1,781	58%	53,733	52%

Appendix Table III. Continued

Appendix Table III: Continued																	
Strategy	Depth Range	Species	Landings (lbs)	Sep-Oct, 2001	D/(D+R)	Nov-Dec, 2001	D/(D+R)	Jan-Feb, 2002	D/(D+R)	Mar-Apr, 2002	D/(D+R)	May-Jun, 2002	D/(D+R)	Jul-Aug, 2002	D/(D+R)	Total	D/(D+R)
Flatfish	>200FM	Whiting	Retained	0												-	
			Discarded	893	100%											893	100%
		Arrowtooth flounder	Retained														
			Discarded														
		Petrale sole	Retained	986												986	
			Discarded	-	0%											-	0%
		Dover sole	Retained	505												505	
			Discarded	166	25%											166	25%
		Logspine thornyheads	Retained														
			Discarded														
		Shortspine thornyheads	Retained	-												-	
			Discarded	124	100%											124	100%
		Thornyheads	Retained														
			Discarded														
		Sablefish	Retained	-												-	
			Discarded	246	100%											246	100%
		Bocaccio	Retained														
			Discarded														
		Chilipepper	Retained														
			Discarded														
		Canary RKF	Retained														
			Discarded														
		Cowcod	Retained														
			Discarded														
		Widow RKF	Retained														
			Discarded														
		Yellowtail RKF	Retained														
			Discarded														
		Yelloweye RKF	Retained														
			Discarded														
		DarkBlotched RKF	Retained														
			Discarded														
POP	Retained																
	Discarded																
Splitnose RKF	Retained	32												32			
	Discarded	-	0%											-	0%		
Black RKF	Retained																
	Discarded																
Lingcod	Retained	-												-			
	Discarded	12	100%											12	100%		
Pacific Halibut	Retained																
	Discarded																
Salmon	Retained																
	Discarded																
Shark, Skate	Retained	999												999			
	Discarded	759	43%											759	43%		
	Sum for >200FM	Retained	2,522											2,522			
		Discarded	2,199	47%										2,199	47%		
Sum for Flatfish Strategy				59,099		7,533		7,558		3,102		1,811		1,306		80,409	
				76,471	56%	45,517	86%	26,783	78%	15,024	83%	4,874	73%	1,781	58%	170,450	68%
All strategies, depth ranges, and species				94,496		15,783		136,735		200,289		206,331		405,097		1,058,731	
				112,564	54%	66,355	81%	150,760	52%	138,459	41%	145,862	41%	83,906	17%	697,906	40%

Appendix Table IV.

A) Ratio estimators and the standard errors (s.e.) for the discarded and bycatch pounds of the 23 selected species or categories per hour of tow, per pound of retained target species, per pound of retained groundfish by depth range, target strategy in the area north of 40°10'N, and period. Bycatch is defined as discarded plus retained pounds of a species, which does not belong to the assigned tow strategy. 0.000: 0 < estimate < 0.0004, -: estimate = 0, ---: s.e. is not estimable due to number of tows = 1.

NOTE: BE ESPECIALLY CAUTIOUS WHEN INTERPRETING THE ESTIMATES THAT ARE CALCULATED WITH LESS THAN 10 TOWS

Strategy	Depth Range	Period	Number of Tows	Discarded lbs per hr	s.e.	Bycatch lbs per hr	s.e.	Discarded lbs per lb Target Species	s.e.	Bycatch lbs per lb Target Species	s.e.	Discarded lbs per lb Groundfish	s.e.	Bycatch lbs per lb Groundfish	s.e.
					Discarded lbs per hr		Bycatch lbs per hr		Discarded lbs per lb Target Species		Bycatch lbs per lb Target Species		Discarded lbs per lb Groundfish		Bycatch lbs per lb Groundfish
North of 40°10'															
Pacific Whiting															
DTS	0-100FM	SEP-OCT 2001	37	146.830	34.706	146.830	34.706	0.402	0.104	0.402	0.104	0.309	0.078	0.309	0.078
DTS	0-100FM	JAN-FEB 2002	1	-	---	-	---	-	---	-	---	-	---	-	---
DTS	0-100FM	MAR-APR 2002	44	0.315	0.175	0.315	0.175	0.001	0.000	0.001	0.000	0.001	0.000	0.001	0.000
DTS	0-100FM	MAY-JUN 2002	121	70.881	14.429	70.893	14.429	0.270	0.057	0.270	0.057	0.178	0.037	0.178	0.037
DTS	0-100FM	JUL-AUG 2002	59	108.647	38.681	109.654	38.660	0.239	0.088	0.241	0.088	0.161	0.060	0.162	0.060
DTS	100-200FM	SEP-OCT 2001	38	166.675	53.728	166.675	53.728	0.621	0.206	0.621	0.206	0.480	0.157	0.480	0.157
DTS	100-200FM	JAN-FEB 2002	12	7.276	2.853	7.276	2.853	0.013	0.005	0.013	0.005	0.009	0.004	0.009	0.004
DTS	100-200FM	MAR-APR 2002	39	40.641	20.503	40.641	20.503	0.065	0.034	0.065	0.034	0.053	0.027	0.053	0.027
DTS	100-200FM	MAY-JUN 2002	33	21.383	5.384	21.383	5.384	0.057	0.016	0.057	0.016	0.045	0.012	0.045	0.012
DTS	100-200FM	JUL-AUG 2002	26	10.496	3.814	10.496	3.814	0.020	0.008	0.020	0.008	0.016	0.006	0.016	0.006
DTS	>200FM	SEP-OCT 2001	80	15.526	6.822	15.526	6.822	0.091	0.040	0.091	0.040	0.090	0.040	0.090	0.040
DTS	>200FM	JAN-FEB 2002	176	20.073	4.703	20.073	4.703	0.062	0.015	0.062	0.015	0.057	0.014	0.057	0.014
DTS	>200FM	MAR-APR 2002	255	6.889	2.070	6.889	2.070	0.024	0.007	0.024	0.007	0.022	0.007	0.022	0.007
DTS	>200FM	MAY-JUN 2002	64	2.665	1.237	2.665	1.237	0.011	0.005	0.011	0.005	0.010	0.005	0.010	0.005
DTS	>200FM	JUL-AUG 2002	14	1.410	0.490	1.410	0.490	0.006	0.002	0.006	0.002	0.005	0.002	0.005	0.002
Shelf RKF	0-100FM	SEP-OCT 2001	6	243.071	142.744	243.071	142.744	0.985	0.806	0.985	0.806	0.705	0.523	0.705	0.523
Shelf RKF	0-100FM	NOV-DEC 2001	54	326.624	233.038	326.624	233.038	0.150	0.108	0.150	0.108	0.150	0.107	0.150	0.107
Shelf RKF	0-100FM	MAR-APR 2002	8	-	---	-	---	-	---	-	---	-	---	-	---
Shelf RKF	0-100FM	MAY-JUN 2002	31	8.302	3.820	8.302	3.820	0.013	0.006	0.013	0.006	0.011	0.005	0.011	0.005
Shelf RKF	0-100FM	JUL-AUG 2002	37	281.599	263.967	281.599	263.967	0.476	0.457	0.476	0.457	0.346	0.328	0.346	0.328
Shelf RKF	100-200FM	MAR-APR 2002	1	-	---	-	---	-	---	-	---	-	---	-	---
Shelf RKF	100-200FM	MAY-JUN 2002	1	-	---	-	---	-	---	-	---	-	---	-	---
Shelf RKF	100-200FM	JUL-AUG 2002	1	9.231	---	9.231	---	0.065	---	0.065	---	0.036	---	0.036	---
Slope RKF	0-100FM	SEP-OCT 2001	1	764.760	---	764.760	---	1.149	---	1.149	---	1.045	---	1.045	---
Slope RKF	0-100FM	MAY-JUN 2002	2	9.450	7.680	9.450	7.680	0.024	0.020	0.024	0.020	0.014	0.011	0.014	0.011
Slope RKF	100-200FM	SEP-OCT 2001	5	682.035	369.486	682.035	369.486	3.034	2.058	3.034	2.058	1.928	1.417	1.928	1.417
Slope RKF	100-200FM	JAN-FEB 2002	11	47.474	34.147	47.474	34.147	0.104	0.071	0.104	0.071	0.084	0.057	0.084	0.057
Slope RKF	100-200FM	MAR-APR 2002	4	61.559	61.368	61.559	61.368	0.093	0.093	0.093	0.093	0.069	0.069	0.069	0.069
Slope RKF	100-200FM	MAY-JUN 2002	13	1.747	0.947	1.747	0.947	0.003	0.002	0.003	0.002	0.003	0.001	0.003	0.001
Slope RKF	100-200FM	JUL-AUG 2002	4	28.344	19.053	28.344	19.053	0.034	0.026	0.034	0.026	0.028	0.020	0.028	0.020
Slope RKF	>200FM	SEP-OCT 2001	1	175.559	---	175.559	---	0.646	---	0.646	---	0.347	---	0.347	---
Flatfish	0-100FM	SEP-OCT 2001	136	153.905	30.370	153.905	30.370	0.722	0.150	0.722	0.150	0.610	0.128	0.610	0.128
Flatfish	0-100FM	NOV-DEC 2001	82	201.708	77.598	201.708	77.598	1.135	0.437	1.135	0.437	0.995	0.382	0.995	0.382
Flatfish	0-100FM	JAN-FEB 2002	20	8.754	8.713	8.754	8.713	0.044	0.044	0.044	0.044	0.033	0.032	0.033	0.032

Appendix Table IV.A. Continued. **NOTE: BE ESPECIALLY CAUTIOUS WHEN INTERPRETING THE ESTIMATES THAT ARE CALCULATED WITH LESS THAN 10 TOWS**

Strategy	Depth Range	Period	Number of Tows	Discarded lbs per hr	s.e.	Bycatch lbs per hr	s.e.	Discarded Target Species	s.e.	Bycatch Target Species	s.e.	Discarded lbs per lb of Groundfish	s.e.	Bycatch lbs per lb of Groundfish	s.e.
					Discarded lbs per hr		Bycatch lbs per hr		Discarded lbs per lb of Groundfish		Bycatch lbs per lb of Groundfish				
Flatfish	0-100FM	MAR-APR 2002	191	20.895	8.408	20.895	8.408	0.094	0.038	0.094	0.038	0.077	0.031	0.077	0.031
Flatfish	0-100FM	MAY-JUN 2002	429	143.870	17.086	143.870	17.086	0.360	0.052	0.360	0.052	0.246	0.034	0.246	0.034
Flatfish	0-100FM	JUL-AUG 2002	491	130.714	15.575	132.158	15.585	0.284	0.044	0.287	0.044	0.223	0.032	0.225	0.032
Flatfish	100-200FM	SEP-OCT 2001	23	165.471	35.562	165.471	35.562	0.388	0.110	0.388	0.110	0.313	0.083	0.313	0.083
Flatfish	100-200FM	NOV-DEC 2001	26	120.330	44.461	120.330	44.461	0.188	0.072	0.188	0.072	0.184	0.070	0.184	0.070
Flatfish	100-200FM	JAN-FEB 2002	74	8.359	2.883	8.359	2.883	0.021	0.007	0.021	0.007	0.019	0.007	0.019	0.007
Flatfish	100-200FM	MAR-APR 2002	33	6.748	3.776	6.748	3.776	0.026	0.015	0.026	0.015	0.019	0.011	0.019	0.011
Flatfish	100-200FM	MAY-JUN 2002	4	0.475	0.475	0.475	0.475	0.004	0.004	0.004	0.004	0.002	0.002	0.002	0.002
Flatfish	100-200FM	JUL-AUG 2002	21	26.978	5.561	26.978	5.561	0.014	0.003	0.014	0.003	0.011	0.003	0.011	0.003
Flatfish	>200FM	JAN-FEB 2002	48	30.168	13.138	30.168	13.138	0.052	0.024	0.052	0.024	0.046	0.021	0.046	0.021
Flatfish	>200FM	MAR-APR 2002	22	12.865	7.283	12.865	7.283	0.015	0.009	0.015	0.009	0.012	0.007	0.012	0.007
Flatfish	>200FM	JUL-AUG 2002	1	7.401	---	7.401	---	0.011	---	0.011	---	0.008	---	0.008	---
Arrowtooth Flounder															
DTS	0-100FM	SEP-OCT 2001	37	180.870	42.016	211.008	40.413	0.495	0.126	0.577	0.127	0.380	0.095	0.443	0.094
DTS	0-100FM	JAN-FEB 2002	1	4.543	---	4.543	---	0.005	---	0.005	---	0.004	---	0.004	---
DTS	0-100FM	MAR-APR 2002	44	145.751	33.490	157.444	34.980	0.403	0.106	0.436	0.112	0.250	0.063	0.270	0.066
DTS	0-100FM	MAY-JUN 2002	121	124.708	25.781	128.881	25.776	0.476	0.102	0.491	0.102	0.313	0.066	0.323	0.066
DTS	0-100FM	JUL-AUG 2002	59	185.860	40.979	205.292	43.365	0.409	0.099	0.452	0.106	0.275	0.069	0.303	0.074
DTS	100-200FM	SEP-OCT 2001	38	12.190	4.210	31.981	7.897	0.045	0.016	0.119	0.031	0.035	0.012	0.092	0.023
DTS	100-200FM	JAN-FEB 2002	12	231.571	64.772	255.773	63.834	0.412	0.126	0.455	0.127	0.295	0.087	0.326	0.088
DTS	100-200FM	MAR-APR 2002	39	126.419	24.059	202.977	34.773	0.203	0.048	0.327	0.071	0.164	0.037	0.263	0.056
DTS	100-200FM	MAY-JUN 2002	33	66.854	18.589	86.626	24.076	0.180	0.054	0.233	0.070	0.140	0.041	0.182	0.054
DTS	100-200FM	JUL-AUG 2002	26	205.842	66.403	254.400	76.809	0.397	0.134	0.490	0.156	0.309	0.103	0.382	0.120
DTS	>200FM	SEP-OCT 2001	80	0.029	0.019	0.158	0.061	0.000	0.000	0.001	0.000	0.000	0.000	0.001	0.000
DTS	>200FM	JAN-FEB 2002	176	6.082	2.952	20.073	5.571	0.019	0.009	0.062	0.017	0.017	0.008	0.057	0.016
DTS	>200FM	MAR-APR 2002	255	8.125	2.742	18.483	4.630	0.028	0.010	0.064	0.016	0.027	0.009	0.060	0.015
DTS	>200FM	MAY-JUN 2002	64	27.425	16.788	27.467	16.787	0.112	0.069	0.112	0.069	0.108	0.067	0.108	0.067
DTS	>200FM	JUL-AUG 2002	14	0.100	0.071	1.623	1.180	0.000	0.000	0.007	0.005	0.000	0.000	0.006	0.005
Shelf RKF	0-100FM	SEP-OCT 2001	6	20.632	8.730	24.786	8.191	0.084	0.064	0.100	0.075	0.060	0.040	0.072	0.045
Shelf RKF	0-100FM	NOV-DEC 2001	54	-	233.038	-	233.038	-	0.108	-	0.108	-	0.107	-	0.107
Shelf RKF	0-100FM	MAR-APR 2002	8	1.294	0.791	1.294	0.791	0.003	0.002	0.003	0.002	0.002	0.001	0.002	0.001
Shelf RKF	0-100FM	MAY-JUN 2002	31	230.635	142.001	230.718	142.000	0.354	0.227	0.354	0.227	0.292	0.187	0.293	0.187
Shelf RKF	0-100FM	JUL-AUG 2002	37	480.705	238.105	494.956	238.479	0.813	0.575	0.837	0.587	0.590	0.358	0.608	0.364
Shelf RKF	100-200FM	MAR-APR 2002	1	129.825	---	154.825	---	0.874	---	1.042	---	0.538	---	0.642	---
Shelf RKF	100-200FM	MAY-JUN 2002	1	211.972	---	211.972	---	2.634	---	2.634	---	1.131	---	1.131	---
Shelf RKF	100-200FM	JUL-AUG 2002	1	1,393.846	---	1,393.846	---	9.758	---	9.758	---	5.398	---	5.398	---
Slope RKF	0-100FM	SEP-OCT 2001	1	18.028	---	18.028	---	0.027	---	0.027	---	0.025	---	0.025	---
Slope RKF	0-100FM	MAY-JUN 2002	2	85.975	32.332	85.975	32.332	0.217	0.089	0.217	0.089	0.129	0.041	0.129	0.041
Slope RKF	100-200FM	SEP-OCT 2001	5	16.381	15.324	33.626	17.350	0.073	0.069	0.150	0.099	0.046	0.044	0.095	0.069
Slope RKF	100-200FM	JAN-FEB 2002	11	25.450	13.028	32.010	14.341	0.056	0.024	0.070	0.024	0.045	0.019	0.057	0.019

Appendix Table IV.A. Continued. **NOTE: BE ESPECIALLY CAUTIOUS WHEN INTERPRETING THE ESTIMATES THAT ARE CALCULATED WITH LESS THAN 10 TOWS**

Strategy	Depth Range	Period	Number of Tows	Discarded lbs per hr	s.e.	Bycatch lbs per hr	s.e.	Discarded Target Species	s.e.	Bycatch Target Species	s.e.	Discarded lbs per lb of Groundfish	s.e.	Bycatch lbs per lb of Groundfish	s.e.
					Discarded lbs per hr		Bycatch lbs per hr		Discarded lbs per lb of Groundfish		Bycatch lbs per lb of Groundfish				
Slope RKF	100-200FM	MAR-APR 2002	4	47.733	28.604	137.093	85.282	0.072	0.028	0.208	0.090	0.053	0.022	0.153	0.070
Slope RKF	100-200FM	MAY-JUN 2002	13	110.136	37.558	116.686	41.635	0.187	0.075	0.198	0.082	0.161	0.063	0.170	0.069
Slope RKF	100-200FM	JUL-AUG 2002	4	12.162	4.962	172.149	85.922	0.015	0.008	0.209	0.129	0.012	0.006	0.169	0.100
Slope RKF	>200FM	SEP-OCT 2001	1	-	---	-	---	-	---	-	---	-	---	-	---
Flatfish	0-100FM	SEP-OCT 2001	136	33.406	9.158	33.406	9.158	0.157	0.044	0.157	0.044	0.132	0.037	0.132	0.037
Flatfish	0-100FM	NOV-DEC 2001	82	3.633	0.869	3.633	0.869	0.020	0.005	0.020	0.005	0.018	0.004	0.018	0.004
Flatfish	0-100FM	JAN-FEB 2002	20	7.295	3.679	7.295	3.679	0.037	0.026	0.037	0.026	0.027	0.017	0.027	0.017
Flatfish	0-100FM	MAR-APR 2002	191	26.750	5.093	26.750	5.093	0.120	0.024	0.120	0.024	0.099	0.020	0.099	0.020
Flatfish	0-100FM	MAY-JUN 2002	429	94.342	15.148	94.342	15.148	0.236	0.042	0.236	0.042	0.162	0.028	0.162	0.028
Flatfish	0-100FM	JUL-AUG 2002	491	153.095	51.233	153.095	51.233	0.332	0.116	0.332	0.116	0.261	0.090	0.261	0.090
Flatfish	100-200FM	SEP-OCT 2001	23	26.162	10.885	26.162	10.885	0.061	0.028	0.061	0.028	0.050	0.022	0.050	0.022
Flatfish	100-200FM	NOV-DEC 2001	26	29.516	15.545	29.516	15.545	0.046	0.025	0.046	0.025	0.045	0.024	0.045	0.024
Flatfish	100-200FM	JAN-FEB 2002	74	40.180	7.796	40.180	7.796	0.101	0.021	0.101	0.021	0.091	0.018	0.091	0.018
Flatfish	100-200FM	MAR-APR 2002	33	58.666	11.955	58.666	11.955	0.229	0.060	0.229	0.060	0.163	0.043	0.163	0.043
Flatfish	100-200FM	MAY-JUN 2002	4	127.358	91.603	127.358	91.603	1.043	0.790	1.043	0.790	0.592	0.429	0.592	0.429
Flatfish	100-200FM	JUL-AUG 2002	21	49.999	32.748	49.999	32.748	0.026	0.017	0.026	0.017	0.020	0.013	0.020	0.013
Flatfish	>200FM	JAN-FEB 2002	48	33.359	9.125	33.359	9.125	0.057	0.019	0.057	0.019	0.051	0.016	0.051	0.016
Flatfish	>200FM	MAR-APR 2002	22	162.613	64.944	162.613	64.944	0.183	0.086	0.183	0.086	0.151	0.068	0.151	0.068
Flatfish	>200FM	JUL-AUG 2002	1	-	---	-	---	-	---	-	---	-	---	-	---
Petrole Sole															
DTS	0-100FM	SEP-OCT 2001	37	17.051	8.421	23.653	8.582	0.047	0.023	0.065	0.024	0.036	0.018	0.050	0.019
DTS	0-100FM	JAN-FEB 2002	1	4.714	---	141.857	---	0.005	---	0.159	---	0.004	---	0.117	---
DTS	0-100FM	MAR-APR 2002	44	13.284	3.246	58.667	9.189	0.037	0.010	0.162	0.033	0.023	0.006	0.101	0.019
DTS	0-100FM	MAY-JUN 2002	121	19.761	5.656	73.755	10.467	0.075	0.022	0.281	0.043	0.050	0.014	0.185	0.027
DTS	0-100FM	JUL-AUG 2002	59	6.312	1.479	46.711	8.466	0.014	0.004	0.103	0.021	0.009	0.002	0.069	0.015
DTS	100-200FM	SEP-OCT 2001	38	0.501	0.380	4.215	1.041	0.002	0.001	0.016	0.004	0.001	0.001	0.012	0.003
DTS	100-200FM	JAN-FEB 2002	12	0.509	0.509	118.351	44.433	0.001	0.001	0.211	0.083	0.001	0.001	0.151	0.058
DTS	100-200FM	MAR-APR 2002	39	0.450	0.203	6.742	2.539	0.001	0.000	0.011	0.004	0.001	0.000	0.009	0.003
DTS	100-200FM	MAY-JUN 2002	33	2.829	2.423	4.055	2.583	0.008	0.007	0.011	0.007	0.006	0.005	0.009	0.005
DTS	100-200FM	JUL-AUG 2002	26	0.094	0.066	3.361	1.849	0.000	0.000	0.006	0.004	0.000	0.000	0.005	0.003
DTS	>200FM	SEP-OCT 2001	80	-	0.019	0.009	0.009	-	0.000	0.000	0.000	-	0.000	0.000	0.000
DTS	>200FM	JAN-FEB 2002	176	0.139	0.070	4.446	1.227	0.000	0.000	0.014	0.004	0.000	0.000	0.013	0.004
DTS	>200FM	MAR-APR 2002	255	0.018	0.010	0.865	0.506	0.000	0.000	0.003	0.002	0.000	0.000	0.003	0.002
DTS	>200FM	MAY-JUN 2002	64	-	16.788	-	16.787	-	0.069	-	0.069	-	0.067	-	0.067
DTS	>200FM	JUL-AUG 2002	14	-	0.071	-	1.180	-	0.000	-	0.005	-	0.000	-	0.005
Shelf RKF	0-100FM	SEP-OCT 2001	6	0.473	0.300	14.787	8.820	0.002	0.002	0.060	0.049	0.001	0.001	0.043	0.032
Shelf RKF	0-100FM	NOV-DEC 2001	54	0.010	0.008	0.171	0.116	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
Shelf RKF	0-100FM	MAR-APR 2002	8	6.534	3.701	49.203	22.521	0.013	0.008	0.095	0.048	0.011	0.006	0.081	0.039
Shelf RKF	0-100FM	MAY-JUN 2002	31	7.862	4.829	43.853	24.097	0.012	0.008	0.067	0.039	0.010	0.006	0.056	0.032
Shelf RKF	0-100FM	JUL-AUG 2002	37	24.123	10.822	47.448	19.401	0.041	0.028	0.080	0.054	0.030	0.017	0.058	0.032

Appendix Table IV.A. Continued. **NOTE: BE ESPECIALLY CAUTIOUS WHEN INTERPRETING THE ESTIMATES THAT ARE CALCULATED WITH LESS THAN 10 TOWS**

Strategy	Depth Range	Period	Number of Tows	Discarded lbs per hr	s.e.	Bycatch lbs per hr	s.e.	Discarded Target Species	s.e.	Bycatch Target Species	s.e.	Discarded lbs per lb of Groundfish	s.e.	Bycatch lbs per lb of Groundfish	s.e.
					Discarded lbs per hr		Bycatch lbs per hr		Discarded lbs per lb of Groundfish		Bycatch lbs per lb of Groundfish				
Shelf RKF	100-200FM	MAR-APR 2002	1	-	---	2.500	---	-	---	0.017	---	-	---	0.010	---
Shelf RKF	100-200FM	MAY-JUN 2002	1	19.564	---	38.964	---	0.243	---	0.484	---	0.104	---	0.208	---
Shelf RKF	100-200FM	JUL-AUG 2002	1	5.308	---	86.077	---	0.037	---	0.603	---	0.021	---	0.333	---
Slope RKF	0-100FM	SEP-OCT 2001	1	12.311	---	12.311	---	0.018	---	0.018	---	0.017	---	0.017	---
Slope RKF	0-100FM	MAY-JUN 2002	2	-	32.332	-	32.332	-	0.089	-	0.089	-	0.041	-	0.041
Slope RKF	100-200FM	SEP-OCT 2001	5	-	15.324	3.664	2.911	-	0.069	0.016	0.014	-	0.044	0.010	0.009
Slope RKF	100-200FM	JAN-FEB 2002	11	2.519	2.485	39.688	19.311	0.006	0.005	0.087	0.035	0.004	0.004	0.071	0.027
Slope RKF	100-200FM	MAR-APR 2002	4	2.021	1.471	12.357	10.949	0.003	0.002	0.019	0.016	0.002	0.001	0.014	0.012
Slope RKF	100-200FM	MAY-JUN 2002	13	0.067	0.067	0.722	0.655	0.000	0.000	0.001	0.001	0.000	0.000	0.001	0.001
Slope RKF	100-200FM	JUL-AUG 2002	4	9.069	5.505	17.957	12.521	0.011	0.008	0.022	0.017	0.009	0.006	0.018	0.013
Slope RKF	>200FM	SEP-OCT 2001	1	-	---	114.290	---	-	---	0.421	---	-	---	0.226	---
Flatfish	0-100FM	SEP-OCT 2001	136	6.650	3.630	6.650	3.630	0.031	0.017	0.031	0.017	0.026	0.014	0.026	0.014
Flatfish	0-100FM	NOV-DEC 2001	82	1.522	0.351	1.522	0.351	0.009	0.002	0.009	0.002	0.008	0.002	0.008	0.002
Flatfish	0-100FM	JAN-FEB 2002	20	2.099	0.726	2.099	0.726	0.011	0.007	0.011	0.007	0.008	0.004	0.008	0.004
Flatfish	0-100FM	MAR-APR 2002	191	9.899	1.422	9.899	1.422	0.045	0.007	0.045	0.007	0.037	0.006	0.037	0.006
Flatfish	0-100FM	MAY-JUN 2002	429	25.423	2.929	25.423	2.929	0.064	0.009	0.064	0.009	0.044	0.006	0.044	0.006
Flatfish	0-100FM	JUL-AUG 2002	491	19.299	2.191	19.299	2.191	0.042	0.006	0.042	0.006	0.033	0.005	0.033	0.005
Flatfish	100-200FM	SEP-OCT 2001	23	2.531	1.595	2.531	1.595	0.006	0.004	0.006	0.004	0.005	0.003	0.005	0.003
Flatfish	100-200FM	NOV-DEC 2001	26	2.230	1.223	2.230	1.223	0.003	0.002	0.003	0.002	0.003	0.002	0.003	0.002
Flatfish	100-200FM	JAN-FEB 2002	74	0.540	0.237	0.540	0.237	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001
Flatfish	100-200FM	MAR-APR 2002	33	5.387	1.664	5.387	1.664	0.021	0.007	0.021	0.007	0.015	0.005	0.015	0.005
Flatfish	100-200FM	MAY-JUN 2002	4	104.119	102.641	104.119	102.641	0.852	0.842	0.852	0.842	0.484	0.477	0.484	0.477
Flatfish	100-200FM	JUL-AUG 2002	21	2.112	1.261	2.112	1.261	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001
Flatfish	>200FM	JAN-FEB 2002	48	1.526	0.842	1.526	0.842	0.003	0.002	0.003	0.002	0.002	0.001	0.002	0.001
Flatfish	>200FM	MAR-APR 2002	22	0.050	0.043	0.050	0.043	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
Flatfish	>200FM	JUL-AUG 2002	1	-	---	-	---	-	---	-	---	-	---	-	---
Dover Sole															
DTS	0-100FM	SEP-OCT 2001	37	52.415	17.996	52.415	17.996	0.143	0.051	0.143	0.051	0.110	0.039	0.110	0.039
DTS	0-100FM	JAN-FEB 2002	1	-	---	-	---	-	---	-	---	-	---	-	---
DTS	0-100FM	MAR-APR 2002	44	59.507	11.405	59.507	11.405	0.165	0.038	0.165	0.038	0.102	0.022	0.102	0.022
DTS	0-100FM	MAY-JUN 2002	121	20.537	3.067	20.537	3.067	0.078	0.012	0.078	0.012	0.052	0.008	0.052	0.008
DTS	0-100FM	JUL-AUG 2002	59	32.103	6.704	32.103	6.704	0.071	0.016	0.071	0.016	0.047	0.011	0.047	0.011
DTS	100-200FM	SEP-OCT 2001	38	18.121	5.658	18.121	5.658	0.067	0.022	0.067	0.022	0.052	0.017	0.052	0.017
DTS	100-200FM	JAN-FEB 2002	12	22.263	7.826	22.263	7.826	0.040	0.015	0.040	0.015	0.028	0.010	0.028	0.010
DTS	100-200FM	MAR-APR 2002	39	79.278	51.492	79.278	51.492	0.128	0.084	0.128	0.084	0.103	0.067	0.103	0.067
DTS	100-200FM	MAY-JUN 2002	33	20.674	6.825	20.674	6.825	0.056	0.019	0.056	0.019	0.043	0.015	0.043	0.015
DTS	100-200FM	JUL-AUG 2002	26	36.210	15.837	36.210	15.837	0.070	0.031	0.070	0.031	0.054	0.024	0.054	0.024
DTS	>200FM	SEP-OCT 2001	80	30.879	4.736	30.879	4.736	0.180	0.031	0.180	0.031	0.179	0.030	0.179	0.030
DTS	>200FM	JAN-FEB 2002	176	9.033	2.364	9.033	2.364	0.028	0.007	0.028	0.007	0.026	0.007	0.026	0.007
DTS	>200FM	MAR-APR 2002	255	11.957	2.488	11.957	2.488	0.042	0.009	0.042	0.009	0.039	0.008	0.039	0.008

Appendix Table IV.A. Continued. **NOTE: BE ESPECIALLY CAUTIOUS WHEN INTERPRETING THE ESTIMATES THAT ARE CALCULATED WITH LESS THAN 10 TOWS**

Strategy	Depth Range	Period	Number of Tows	Discarded lbs per hr	s.e.	Bycatch lbs per hr	s.e.	Discarded lbs per lb Target Species	s.e.	Bycatch lbs per lb Target Species	s.e.	Discarded lbs per lb of Groundfish	s.e.	Bycatch lbs per lb of Groundfish	s.e.
					Discarded lbs per hr		Bycatch lbs per hr		Discarded lbs per lb Target Species		Bycatch lbs per lb Target Species		Discarded lbs per lb of Groundfish		Bycatch lbs per lb of Groundfish
DTS	>200FM	MAY-JUN 2002	64	36.928	8.849	36.928	8.849	0.150	0.039	0.150	0.039	0.145	0.038	0.145	0.038
DTS	>200FM	JUL-AUG 2002	14	13.988	10.116	13.988	10.116	0.057	0.041	0.057	0.041	0.054	0.039	0.054	0.039
Shelf RKF	0-100FM	SEP-OCT 2001	6	57.684	49.111	59.167	48.793	0.234	0.217	0.240	0.220	0.167	0.151	0.172	0.152
Shelf RKF	0-100FM	NOV-DEC 2001	54	0.006	0.006	0.006	0.006	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
Shelf RKF	0-100FM	MAR-APR 2002	8	1.213	1.069	8.346	5.952	0.002	0.002	0.016	0.012	0.002	0.002	0.014	0.010
Shelf RKF	0-100FM	MAY-JUN 2002	31	17.938	13.594	52.013	28.601	0.028	0.021	0.080	0.046	0.023	0.018	0.066	0.038
Shelf RKF	0-100FM	JUL-AUG 2002	37	46.270	13.525	46.474	13.525	0.078	0.049	0.079	0.049	0.057	0.028	0.057	0.028
Shelf RKF	100-200FM	MAR-APR 2002	1	13.117	---	50.617	---	0.088	---	0.341	---	0.054	---	0.210	---
Shelf RKF	100-200FM	MAY-JUN 2002	1	46.061	---	93.361	---	0.572	---	1.160	---	0.246	---	0.498	---
Shelf RKF	100-200FM	JUL-AUG 2002	1	96.923	---	96.923	---	0.679	---	0.679	---	0.375	---	0.375	---
Slope RKF	0-100FM	SEP-OCT 2001	1	17.193	---	17.193	---	0.026	---	0.026	---	0.023	---	0.023	---
Slope RKF	0-100FM	MAY-JUN 2002	2	6.925	2.873	81.925	30.746	0.018	0.008	0.207	0.085	0.010	0.004	0.123	0.039
Slope RKF	100-200FM	SEP-OCT 2001	5	12.312	8.330	45.619	31.993	0.055	0.042	0.203	0.159	0.035	0.028	0.129	0.106
Slope RKF	100-200FM	JAN-FEB 2002	11	1.154	0.914	26.258	19.801	0.003	0.002	0.058	0.042	0.002	0.002	0.047	0.034
Slope RKF	100-200FM	MAR-APR 2002	4	12.104	8.576	71.550	55.459	0.018	0.011	0.109	0.074	0.014	0.008	0.080	0.056
Slope RKF	100-200FM	MAY-JUN 2002	13	49.522	24.871	103.395	57.610	0.084	0.045	0.175	0.103	0.072	0.038	0.151	0.088
Slope RKF	100-200FM	JUL-AUG 2002	4	76.462	45.970	85.350	42.704	0.093	0.064	0.104	0.064	0.075	0.050	0.084	0.050
Slope RKF	>200FM	SEP-OCT 2001	1	431.852	---	431.852	---	1.589	---	1.589	---	0.853	---	0.853	---
Flatfish	0-100FM	SEP-OCT 2001	136	77.973	18.142	89.471	18.238	0.366	0.088	0.420	0.090	0.309	0.075	0.354	0.077
Flatfish	0-100FM	NOV-DEC 2001	82	10.160	3.523	10.160	3.523	0.057	0.020	0.057	0.020	0.050	0.017	0.050	0.017
Flatfish	0-100FM	JAN-FEB 2002	20	0.775	0.359	0.775	0.359	0.004	0.003	0.004	0.003	0.003	0.002	0.003	0.002
Flatfish	0-100FM	MAR-APR 2002	191	15.850	2.912	26.947	4.175	0.071	0.014	0.121	0.020	0.059	0.011	0.100	0.016
Flatfish	0-100FM	MAY-JUN 2002	429	18.819	2.729	64.928	7.119	0.047	0.008	0.163	0.022	0.032	0.005	0.111	0.014
Flatfish	0-100FM	JUL-AUG 2002	491	23.822	3.293	45.152	4.411	0.052	0.009	0.098	0.014	0.041	0.007	0.077	0.010
Flatfish	100-200FM	SEP-OCT 2001	23	174.459	44.988	188.648	46.872	0.409	0.130	0.442	0.137	0.330	0.099	0.357	0.104
Flatfish	100-200FM	NOV-DEC 2001	26	62.882	20.535	78.128	21.590	0.098	0.034	0.122	0.036	0.096	0.033	0.119	0.035
Flatfish	100-200FM	JAN-FEB 2002	74	6.558	4.717	29.200	7.259	0.016	0.012	0.073	0.019	0.015	0.011	0.066	0.017
Flatfish	100-200FM	MAR-APR 2002	33	30.444	24.925	87.561	27.151	0.119	0.098	0.341	0.119	0.084	0.070	0.243	0.086
Flatfish	100-200FM	MAY-JUN 2002	4	107.799	87.010	137.002	82.443	0.882	0.734	1.122	0.741	0.501	0.406	0.636	0.389
Flatfish	100-200FM	JUL-AUG 2002	21	19.212	6.366	296.040	127.072	0.010	0.004	0.154	0.068	0.008	0.003	0.117	0.052
Flatfish	>200FM	JAN-FEB 2002	48	18.415	7.597	53.545	15.907	0.032	0.014	0.092	0.032	0.028	0.012	0.082	0.028
Flatfish	>200FM	MAR-APR 2002	22	3.496	1.601	139.396	43.479	0.004	0.002	0.157	0.063	0.003	0.002	0.129	0.049
Flatfish	>200FM	JUL-AUG 2002	1	2.114	---	56.354	---	0.003	---	0.081	---	0.002	---	0.059	---
Longspine thornyhead															
DTS	0-100FM	SEP-OCT 2001	37	-	17.996	-	17.996	-	0.051	-	0.051	-	0.039	-	0.039
DTS	0-100FM	JAN-FEB 2002	1	-	---	-	---	-	---	-	---	-	---	-	---
DTS	0-100FM	MAR-APR 2002	44	-	11.405	-	11.405	-	0.038	-	0.038	-	0.022	-	0.022
DTS	0-100FM	MAY-JUN 2002	121	-	3.067	-	3.067	-	0.012	-	0.012	-	0.008	-	0.008
DTS	0-100FM	JUL-AUG 2002	59	-	6.704	-	6.704	-	0.016	-	0.016	-	0.011	-	0.011
DTS	100-200FM	SEP-OCT 2001	38	-	5.658	-	5.658	-	0.022	-	0.022	-	0.017	-	0.017

Appendix Table IV.A. Continued. **NOTE: BE ESPECIALLY CAUTIOUS WHEN INTERPRETING THE ESTIMATES THAT ARE CALCULATED WITH LESS THAN 10 TOWS**

Strategy	Depth Range	Period	Number of Tows	Discarded lbs per hr	s.e.	Bycatch lbs per hr	s.e.	Discarded	s.e.	Bycatch	s.e.	Discarded	s.e.	Bycatch	s.e.
					Discarded		lbs per lb	Discarded	lbs per lb	Bycatch	lbs per lb	Discarded	lbs per lb	Bycatch	lbs per lb
					Species		Target	Target	Target	Groundfish	Groundfish	Groundfish	Groundfish		
DTS	100-200FM	JAN-FEB 2002	12	0.052	0.052	0.052	0.052	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
DTS	100-200FM	MAR-APR 2002	39	0.437	0.271	0.437	0.271	0.001	0.000	0.001	0.000	0.001	0.000	0.001	0.000
DTS	100-200FM	MAY-JUN 2002	33	0.048	0.048	0.048	0.048	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
DTS	100-200FM	JUL-AUG 2002	26	-	15.837	-	15.837	-	0.031	-	0.031	-	0.024	-	0.024
DTS	>200FM	SEP-OCT 2001	80	15.303	3.259	15.303	3.259	0.089	0.020	0.089	0.020	0.088	0.020	0.088	0.020
DTS	>200FM	JAN-FEB 2002	176	7.909	1.473	7.909	1.473	0.024	0.005	0.024	0.005	0.022	0.004	0.022	0.004
DTS	>200FM	MAR-APR 2002	255	13.393	2.014	13.393	2.014	0.046	0.007	0.046	0.007	0.044	0.007	0.044	0.007
DTS	>200FM	MAY-JUN 2002	64	9.972	3.012	9.972	3.012	0.041	0.013	0.041	0.013	0.039	0.013	0.039	0.013
DTS	>200FM	JUL-AUG 2002	14	8.726	5.281	8.726	5.281	0.035	0.021	0.035	0.021	0.033	0.020	0.033	0.020
Shelf RKF	0-100FM	SEP-OCT 2001	6	-	49.111	-	48.793	-	0.217	-	0.220	-	0.151	-	0.152
Shelf RKF	0-100FM	NOV-DEC 2001	54	-	0.006	-	0.006	-	0.000	-	0.000	-	0.000	-	0.000
Shelf RKF	0-100FM	MAR-APR 2002	8	-	1.069	-	5.952	-	0.002	-	0.012	-	0.002	-	0.010
Shelf RKF	0-100FM	MAY-JUN 2002	31	-	13.594	-	28.601	-	0.021	-	0.046	-	0.018	-	0.038
Shelf RKF	0-100FM	JUL-AUG 2002	37	-	13.525	-	13.525	-	0.049	-	0.049	-	0.028	-	0.028
Shelf RKF	100-200FM	MAR-APR 2002	1	-	---	-	---	-	---	-	---	-	---	-	---
Shelf RKF	100-200FM	MAY-JUN 2002	1	-	---	-	---	-	---	-	---	-	---	-	---
Shelf RKF	100-200FM	JUL-AUG 2002	1	-	---	-	---	-	---	-	---	-	---	-	---
Slope RKF	0-100FM	SEP-OCT 2001	1	-	---	-	---	-	---	-	---	-	---	-	---
Slope RKF	0-100FM	MAY-JUN 2002	2	-	2.873	-	30.746	-	0.008	-	0.085	-	0.004	-	0.039
Slope RKF	100-200FM	SEP-OCT 2001	5	-	8.330	-	31.993	-	0.042	-	0.159	-	0.028	-	0.106
Slope RKF	100-200FM	JAN-FEB 2002	11	0.105	0.105	0.105	0.105	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
Slope RKF	100-200FM	MAR-APR 2002	4	-	8.576	-	55.459	-	0.011	-	0.074	-	0.008	-	0.056
Slope RKF	100-200FM	MAY-JUN 2002	13	-	24.871	-	57.610	-	0.045	-	0.103	-	0.038	-	0.088
Slope RKF	100-200FM	JUL-AUG 2002	4	-	45.970	-	42.704	-	0.064	-	0.064	-	0.050	-	0.050
Slope RKF	>200FM	SEP-OCT 2001	1	-	---	-	---	-	---	-	---	-	---	-	---
Flatfish	0-100FM	SEP-OCT 2001	136	-	18.142	-	18.238	-	0.088	-	0.090	-	0.075	-	0.077
Flatfish	0-100FM	NOV-DEC 2001	82	-	3.523	-	3.523	-	0.020	-	0.020	-	0.017	-	0.017
Flatfish	0-100FM	JAN-FEB 2002	20	-	0.359	-	0.359	-	0.003	-	0.003	-	0.002	-	0.002
Flatfish	0-100FM	MAR-APR 2002	191	-	2.912	-	4.175	-	0.014	-	0.020	-	0.011	-	0.016
Flatfish	0-100FM	MAY-JUN 2002	429	-	2.729	-	7.119	-	0.008	-	0.022	-	0.005	-	0.014
Flatfish	0-100FM	JUL-AUG 2002	491	-	3.293	-	4.411	-	0.009	-	0.014	-	0.007	-	0.010
Flatfish	100-200FM	SEP-OCT 2001	23	0.462	0.416	0.462	0.416	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001
Flatfish	100-200FM	NOV-DEC 2001	26	0.130	0.111	0.130	0.111	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
Flatfish	100-200FM	JAN-FEB 2002	74	0.084	0.079	0.084	0.079	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
Flatfish	100-200FM	MAR-APR 2002	33	0.019	0.013	0.019	0.013	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
Flatfish	100-200FM	MAY-JUN 2002	4	2.925	2.925	2.925	2.925	0.024	0.024	0.024	0.024	0.014	0.014	0.014	0.014
Flatfish	100-200FM	JUL-AUG 2002	21	-	6.366	-	127.072	-	0.004	-	0.068	-	0.003	-	0.052
Flatfish	>200FM	JAN-FEB 2002	48	0.028	0.015	0.028	0.015	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
Flatfish	>200FM	MAR-APR 2002	22	4.476	2.999	4.476	2.999	0.005	0.004	0.005	0.004	0.004	0.003	0.004	0.003
Flatfish	>200FM	JUL-AUG 2002	1	-	---	-	---	-	---	-	---	-	---	-	---

Appendix Table IV.A. Continued. **NOTE: BE ESPECIALLY CAUTIOUS WHEN INTERPRETING THE ESTIMATES THAT ARE CALCULATED WITH LESS THAN 10 TOWS**

Strategy	Depth Range	Period	Number of Tows	Discarded lbs per hr	s.e.	Bycatch lbs per hr	s.e.	Discarded lbs per lb Target Species	s.e.	Bycatch lbs per lb Target Species	s.e.	Discarded lbs per lb of Groundfish	s.e.	Bycatch lbs per lb of Groundfish	s.e.
					Discarded lbs per hr		Bycatch lbs per hr		Discarded lbs per lb Target Species		Bycatch lbs per lb Target Species		Discarded lbs per lb of Groundfish		Bycatch lbs per lb of Groundfish
Shortspine thornyhead															
DTS	0-100FM	SEP-OCT 2001	37	13.644	7.303	13.644	7.303	0.037	0.020	0.037	0.020	0.029	0.016	0.029	0.016
DTS	0-100FM	JAN-FEB 2002	1	-	---	-	---	-	---	-	---	-	---	-	---
DTS	0-100FM	MAR-APR 2002	44	0.019	0.019	0.019	0.019	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
DTS	0-100FM	MAY-JUN 2002	121	0.009	0.008	0.009	0.008	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
DTS	0-100FM	JUL-AUG 2002	59	3.602	1.614	3.602	1.614	0.008	0.004	0.008	0.004	0.005	0.002	0.005	0.002
DTS	100-200FM	SEP-OCT 2001	38	16.372	6.192	16.372	6.192	0.061	0.024	0.061	0.024	0.047	0.018	0.047	0.018
DTS	100-200FM	JAN-FEB 2002	12	56.219	18.986	56.219	18.986	0.100	0.036	0.100	0.036	0.072	0.025	0.072	0.025
DTS	100-200FM	MAR-APR 2002	39	14.479	4.271	14.479	4.271	0.023	0.008	0.023	0.008	0.019	0.006	0.019	0.006
DTS	100-200FM	MAY-JUN 2002	33	0.470	0.219	0.470	0.219	0.001	0.001	0.001	0.001	0.001	0.000	0.001	0.000
DTS	100-200FM	JUL-AUG 2002	26	27.273	17.325	27.273	17.325	0.053	0.034	0.053	0.034	0.041	0.026	0.041	0.026
DTS	>200FM	SEP-OCT 2001	80	4.506	1.293	4.506	1.293	0.026	0.008	0.026	0.008	0.026	0.008	0.026	0.008
DTS	>200FM	JAN-FEB 2002	176	4.125	1.061	4.125	1.061	0.013	0.003	0.013	0.003	0.012	0.003	0.012	0.003
DTS	>200FM	MAR-APR 2002	255	4.373	1.159	4.373	1.159	0.015	0.004	0.015	0.004	0.014	0.004	0.014	0.004
DTS	>200FM	MAY-JUN 2002	64	2.476	0.965	2.476	0.965	0.010	0.004	0.010	0.004	0.010	0.004	0.010	0.004
DTS	>200FM	JUL-AUG 2002	14	0.960	0.652	0.960	0.652	0.004	0.003	0.004	0.003	0.004	0.002	0.004	0.002
Shelf RKF	0-100FM	SEP-OCT 2001	6	-	49.111	0.593	0.593	-	0.217	0.002	0.002	-	0.151	0.002	0.002
Shelf RKF	0-100FM	NOV-DEC 2001	54	-	0.006	-	0.006	-	0.000	-	0.000	-	0.000	-	0.000
Shelf RKF	0-100FM	MAR-APR 2002	8	-	1.069	-	5.952	-	0.002	-	0.012	-	0.002	-	0.010
Shelf RKF	0-100FM	MAY-JUN 2002	31	-	13.594	0.032	0.032	-	0.021	0.000	0.000	-	0.018	0.000	0.000
Shelf RKF	0-100FM	JUL-AUG 2002	37	-	13.525	0.033	0.023	-	0.049	0.000	0.000	-	0.028	0.000	0.000
Shelf RKF	100-200FM	MAR-APR 2002	1	14.648	---	14.648	---	0.099	---	0.099	---	0.061	---	0.061	---
Shelf RKF	100-200FM	MAY-JUN 2002	1	21.875	---	29.825	---	0.272	---	0.371	---	0.117	---	0.159	---
Shelf RKF	100-200FM	JUL-AUG 2002	1	-	---	-	---	-	---	-	---	-	---	-	---
Slope RKF	0-100FM	SEP-OCT 2001	1	15.232	---	15.232	---	0.023	---	0.023	---	0.021	---	0.021	---
Slope RKF	0-100FM	MAY-JUN 2002	2	1.750	1.538	1.750	1.538	0.004	0.004	0.004	0.004	0.003	0.002	0.003	0.002
Slope RKF	100-200FM	SEP-OCT 2001	5	37.592	17.225	40.101	19.220	0.167	0.105	0.178	0.114	0.106	0.074	0.113	0.080
Slope RKF	100-200FM	JAN-FEB 2002	11	6.171	3.195	7.483	4.293	0.014	0.006	0.016	0.008	0.011	0.005	0.013	0.007
Slope RKF	100-200FM	MAR-APR 2002	4	0.903	0.650	32.064	28.925	0.001	0.001	0.049	0.042	0.001	0.001	0.036	0.031
Slope RKF	100-200FM	MAY-JUN 2002	13	11.265	8.900	11.265	8.900	0.019	0.015	0.019	0.015	0.016	0.013	0.016	0.013
Slope RKF	100-200FM	JUL-AUG 2002	4	-	45.970	7.170	3.469	-	0.064	0.009	0.005	-	0.050	0.007	0.004
Slope RKF	>200FM	SEP-OCT 2001	1	64.521	---	64.521	---	0.237	---	0.237	---	0.127	---	0.127	---
Flatfish	0-100FM	SEP-OCT 2001	136	2.051	1.583	2.961	1.673	0.010	0.007	0.014	0.008	0.008	0.006	0.012	0.007
Flatfish	0-100FM	NOV-DEC 2001	82	-	3.523	-	3.523	-	0.020	-	0.020	-	0.017	-	0.017
Flatfish	0-100FM	JAN-FEB 2002	20	0.012	0.012	0.012	0.012	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
Flatfish	0-100FM	MAR-APR 2002	191	0.033	0.018	0.033	0.018	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
Flatfish	0-100FM	MAY-JUN 2002	429	0.032	0.018	0.057	0.023	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
Flatfish	0-100FM	JUL-AUG 2002	491	0.227	0.182	0.359	0.210	0.000	0.000	0.001	0.000	0.000	0.000	0.001	0.000
Flatfish	100-200FM	SEP-OCT 2001	23	33.697	10.592	45.497	13.904	0.079	0.029	0.107	0.038	0.064	0.022	0.086	0.029
Flatfish	100-200FM	NOV-DEC 2001	26	0.799	0.271	0.799	0.271	0.001	0.000	0.001	0.000	0.001	0.000	0.001	0.000
Flatfish	100-200FM	JAN-FEB 2002	74	2.665	1.112	4.129	1.366	0.007	0.003	0.010	0.003	0.006	0.003	0.009	0.003

Appendix Table IV.A. Continued. **NOTE: BE ESPECIALLY CAUTIOUS WHEN INTERPRETING THE ESTIMATES THAT ARE CALCULATED WITH LESS THAN 10 TOWS**

Strategy	Depth Range	Period	Number of Tows	Discarded lbs per hr	s.e.	Bycatch lbs per hr	s.e.	Discarded	s.e.	Bycatch	s.e.	Discarded	s.e.	Bycatch	s.e.
					Discarded		lbs per lb	Discarded	lbs per lb	Bycatch	lbs per lb	Discarded	lbs per lb	Bycatch	lbs per lb
					Species		Target	Species	Target	Species	Target	Groundfish	Target	Groundfish	Target
Flatfish	100-200FM	MAR-APR 2002	33	5.139	2.282	7.478	2.530	0.020	0.009	0.029	0.011	0.014	0.007	0.021	0.008
Flatfish	100-200FM	MAY-JUN 2002	4	12.015	7.908	12.182	7.961	0.098	0.070	0.100	0.070	0.056	0.037	0.057	0.037
Flatfish	100-200FM	JUL-AUG 2002	21	2.068	2.068	13.812	5.154	0.001	0.001	0.007	0.003	0.001	0.001	0.005	0.002
Flatfish	>200FM	JAN-FEB 2002	48	1.785	0.717	4.185	1.381	0.003	0.001	0.007	0.003	0.003	0.001	0.006	0.002
Flatfish	>200FM	MAR-APR 2002	22	13.918	6.080	28.474	6.638	0.016	0.008	0.032	0.011	0.013	0.006	0.026	0.008
Flatfish	>200FM	JUL-AUG 2002	1	-	---	-	---	-	---	-	---	-	---	-	---
Thornyheads															
DTS	0-100FM	SEP-OCT 2001	37	-	7.303	-	7.303	-	0.020	-	0.020	-	0.016	-	0.016
DTS	0-100FM	JAN-FEB 2002	1	-	---	-	---	-	---	-	---	-	---	-	---
DTS	0-100FM	MAR-APR 2002	44	-	0.019	-	0.019	-	0.000	-	0.000	-	0.000	-	0.000
DTS	0-100FM	MAY-JUN 2002	121	-	0.008	-	0.008	-	0.000	-	0.000	-	0.000	-	0.000
DTS	0-100FM	JUL-AUG 2002	59	-	1.614	-	1.614	-	0.004	-	0.004	-	0.002	-	0.002
DTS	100-200FM	SEP-OCT 2001	38	0.026	0.018	0.026	0.018	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
DTS	100-200FM	JAN-FEB 2002	12	-	18.986	-	18.986	-	0.036	-	0.036	-	0.025	-	0.025
DTS	100-200FM	MAR-APR 2002	39	2.114	1.350	2.114	1.350	0.003	0.002	0.003	0.002	0.003	0.002	0.003	0.002
DTS	100-200FM	MAY-JUN 2002	33	9.732	6.520	9.732	6.520	0.026	0.018	0.026	0.018	0.020	0.014	0.020	0.014
DTS	100-200FM	JUL-AUG 2002	26	-	17.325	-	17.325	-	0.034	-	0.034	-	0.026	-	0.026
DTS	>200FM	SEP-OCT 2001	80	5.060	2.129	5.060	2.129	0.030	0.013	0.030	0.013	0.029	0.012	0.029	0.012
DTS	>200FM	JAN-FEB 2002	176	6.080	1.378	6.080	1.378	0.019	0.004	0.019	0.004	0.017	0.004	0.017	0.004
DTS	>200FM	MAR-APR 2002	255	11.641	2.107	11.641	2.107	0.040	0.008	0.040	0.008	0.038	0.007	0.038	0.007
DTS	>200FM	MAY-JUN 2002	64	14.933	3.844	14.933	3.844	0.061	0.017	0.061	0.017	0.059	0.016	0.059	0.016
DTS	>200FM	JUL-AUG 2002	14	32.524	30.303	32.524	30.303	0.131	0.123	0.131	0.123	0.124	0.116	0.124	0.116
Shelf RKF	0-100FM	SEP-OCT 2001	6	-	49.111	-	0.593	-	0.217	-	0.002	-	0.151	-	0.002
Shelf RKF	0-100FM	NOV-DEC 2001	54	-	0.006	-	0.006	-	0.000	-	0.000	-	0.000	-	0.000
Shelf RKF	0-100FM	MAR-APR 2002	8	-	1.069	-	5.952	-	0.002	-	0.012	-	0.002	-	0.010
Shelf RKF	0-100FM	MAY-JUN 2002	31	-	13.594	-	0.032	-	0.021	-	0.000	-	0.018	-	0.000
Shelf RKF	0-100FM	JUL-AUG 2002	37	-	13.525	-	0.023	-	0.049	-	0.000	-	0.028	-	0.000
Shelf RKF	100-200FM	MAR-APR 2002	1	-	---	-	---	-	---	-	---	-	---	-	---
Shelf RKF	100-200FM	MAY-JUN 2002	1	-	---	-	---	-	---	-	---	-	---	-	---
Shelf RKF	100-200FM	JUL-AUG 2002	1	-	---	-	---	-	---	-	---	-	---	-	---
Slope RKF	0-100FM	SEP-OCT 2001	1	-	---	-	---	-	---	-	---	-	---	-	---
Slope RKF	0-100FM	MAY-JUN 2002	2	-	1.538	-	1.538	-	0.004	-	0.004	-	0.002	-	0.002
Slope RKF	100-200FM	SEP-OCT 2001	5	-	17.225	-	19.220	-	0.105	-	0.114	-	0.074	-	0.080
Slope RKF	100-200FM	JAN-FEB 2002	11	-	3.195	-	4.293	-	0.006	-	0.008	-	0.005	-	0.007
Slope RKF	100-200FM	MAR-APR 2002	4	10.091	10.091	10.091	10.091	0.015	0.015	0.015	0.015	0.011	0.011	0.011	0.011
Slope RKF	100-200FM	MAY-JUN 2002	13	0.835	0.777	0.835	0.777	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001
Slope RKF	100-200FM	JUL-AUG 2002	4	-	45.970	-	3.469	-	0.064	-	0.005	-	0.050	-	0.004
Slope RKF	>200FM	SEP-OCT 2001	1	-	---	-	---	-	---	-	---	-	---	-	---
Flatfish	0-100FM	SEP-OCT 2001	136	0.043	0.043	0.313	0.273	0.000	0.000	0.001	0.001	0.000	0.000	0.001	0.001
Flatfish	0-100FM	NOV-DEC 2001	82	-	3.523	-	3.523	-	0.020	-	0.020	-	0.017	-	0.017

Appendix Table IV.A. Continued. **NOTE: BE ESPECIALLY CAUTIOUS WHEN INTERPRETING THE ESTIMATES THAT ARE CALCULATED WITH LESS THAN 10 TOWS**

Strategy	Depth Range	Period	Number of Tows	Discarded lbs per hr	s.e.	Bycatch lbs per hr	s.e.	Discarded	s.e.	Bycatch	s.e.	Discarded	s.e.	Bycatch	s.e.
					Discarded		lbs per lb	Discarded	lbs per lb	Discarded	lbs per lb	Discarded	lbs per lb		
					Target Species		Target Species	Target Species	Target Species	Groundfish	Groundfish	Groundfish	Groundfish		
Flatfish	0-100FM	JAN-FEB 2002	20	-	0.012	-	0.012	-	0.000	-	0.000	-	0.000	-	0.000
Flatfish	0-100FM	MAR-APR 2002	191	-	0.018	-	0.018	-	0.000	-	0.000	-	0.000	-	0.000
Flatfish	0-100FM	MAY-JUN 2002	429	-	0.018	-	0.023	-	0.000	-	0.000	-	0.000	-	0.000
Flatfish	0-100FM	JUL-AUG 2002	491	-	0.182	-	0.210	-	0.000	-	0.000	-	0.000	-	0.000
Flatfish	100-200FM	SEP-OCT 2001	23	-	10.592	-	13.904	-	0.029	-	0.038	-	0.022	-	0.029
Flatfish	100-200FM	NOV-DEC 2001	26	0.970	0.970	0.970	0.970	0.002	0.002	0.002	0.002	0.001	0.001	0.001	0.001
Flatfish	100-200FM	JAN-FEB 2002	74	1.500	1.500	1.532	1.500	0.004	0.004	0.004	0.004	0.003	0.003	0.003	0.003
Flatfish	100-200FM	MAR-APR 2002	33	-	2.282	6.194	3.476	-	0.009	0.024	0.014	-	0.007	0.017	0.010
Flatfish	100-200FM	MAY-JUN 2002	4	-	7.908	-	7.961	-	0.070	-	0.070	-	0.037	-	0.037
Flatfish	100-200FM	JUL-AUG 2002	21	-	2.068	0.041	0.041	-	0.001	0.000	0.000	-	0.001	0.000	0.000
Flatfish	>200FM	JAN-FEB 2002	48	0.034	0.034	0.034	0.034	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
Flatfish	>200FM	MAR-APR 2002	22	2.653	2.653	2.938	2.657	0.003	0.003	0.003	0.003	0.002	0.002	0.003	0.002
Flatfish	>200FM	JUL-AUG 2002	1	22.730	---	198.466	---	0.033	---	0.287	---	0.024	---	0.208	---
Sablefish															
DTS	0-100FM	SEP-OCT 2001	37	34.589	13.600	34.589	13.600	0.095	0.038	0.095	0.038	0.073	0.029	0.073	0.029
DTS	0-100FM	JAN-FEB 2002	1	-	---	-	---	-	---	-	---	-	---	-	---
DTS	0-100FM	MAR-APR 2002	44	85.161	43.787	85.161	43.787	0.236	0.124	0.236	0.124	0.146	0.076	0.146	0.076
DTS	0-100FM	MAY-JUN 2002	121	179.103	95.241	179.103	95.241	0.683	0.365	0.683	0.365	0.449	0.239	0.449	0.239
DTS	0-100FM	JUL-AUG 2002	59	163.797	47.952	163.797	47.952	0.360	0.111	0.360	0.111	0.242	0.076	0.242	0.076
DTS	100-200FM	SEP-OCT 2001	38	14.956	4.183	14.956	4.183	0.056	0.016	0.056	0.016	0.043	0.012	0.043	0.012
DTS	100-200FM	JAN-FEB 2002	12	146.460	53.514	146.460	53.514	0.261	0.100	0.261	0.100	0.187	0.070	0.187	0.070
DTS	100-200FM	MAR-APR 2002	39	103.553	30.403	103.553	30.403	0.167	0.054	0.167	0.054	0.134	0.043	0.134	0.043
DTS	100-200FM	MAY-JUN 2002	33	51.982	18.419	51.982	18.419	0.140	0.052	0.140	0.052	0.109	0.040	0.109	0.040
DTS	100-200FM	JUL-AUG 2002	26	48.212	18.583	48.212	18.583	0.093	0.037	0.093	0.037	0.072	0.029	0.072	0.029
DTS	>200FM	SEP-OCT 2001	80	2.106	0.658	2.106	0.658	0.012	0.004	0.012	0.004	0.012	0.004	0.012	0.004
DTS	>200FM	JAN-FEB 2002	176	16.326	3.171	16.326	3.171	0.050	0.010	0.050	0.010	0.046	0.009	0.046	0.009
DTS	>200FM	MAR-APR 2002	255	20.656	5.034	20.656	5.034	0.072	0.018	0.072	0.018	0.067	0.017	0.067	0.017
DTS	>200FM	MAY-JUN 2002	64	21.127	5.133	21.127	5.133	0.086	0.023	0.086	0.023	0.083	0.022	0.083	0.022
DTS	>200FM	JUL-AUG 2002	14	22.436	8.485	22.436	8.485	0.091	0.035	0.091	0.035	0.086	0.033	0.086	0.033
Shelf RKF	0-100FM	SEP-OCT 2001	6	88.799	55.678	130.925	89.447	0.360	0.300	0.531	0.454	0.258	0.197	0.380	0.302
Shelf RKF	0-100FM	NOV-DEC 2001	54	0.770	0.759	0.770	0.759	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
Shelf RKF	0-100FM	MAR-APR 2002	8	45.254	44.885	45.590	44.842	0.088	0.087	0.088	0.087	0.074	0.074	0.075	0.074
Shelf RKF	0-100FM	MAY-JUN 2002	31	13.236	8.888	15.469	9.239	0.020	0.014	0.024	0.015	0.017	0.012	0.020	0.012
Shelf RKF	0-100FM	JUL-AUG 2002	37	28.055	8.536	29.146	8.596	0.047	0.030	0.049	0.031	0.034	0.017	0.036	0.017
Shelf RKF	100-200FM	MAR-APR 2002	1	8.425	---	8.425	---	0.057	---	0.057	---	0.035	---	0.035	---
Shelf RKF	100-200FM	MAY-JUN 2002	1	5.392	---	15.292	---	0.067	---	0.190	---	0.029	---	0.082	---
Shelf RKF	100-200FM	JUL-AUG 2002	1	7.385	---	7.385	---	0.052	---	0.052	---	0.029	---	0.029	---
Slope RKF	0-100FM	SEP-OCT 2001	1	-	---	66.186	---	-	---	0.099	---	-	---	0.090	---
Slope RKF	0-100FM	MAY-JUN 2002	2	70.350	64.211	195.350	109.746	0.178	0.163	0.494	0.287	0.106	0.096	0.294	0.156
Slope RKF	100-200FM	SEP-OCT 2001	5	5.772	5.667	34.601	26.094	0.026	0.025	0.154	0.126	0.016	0.016	0.098	0.083

Appendix Table IV.A. Continued. **NOTE: BE ESPECIALLY CAUTIOUS WHEN INTERPRETING THE ESTIMATES THAT ARE CALCULATED WITH LESS THAN 10 TOWS**

Strategy	Depth Range	Period	Number of Tows	Discarded lbs per hr	s.e.	Bycatch lbs per hr	s.e.	Discarded lbs per lb Target Species	s.e.	Bycatch lbs per lb Target Species	s.e.	Discarded lbs per lb of Groundfish	s.e.	Bycatch lbs per lb of Groundfish	s.e.
					Discarded lbs per hr		Bycatch lbs per hr		Discarded lbs per lb of Groundfish		Bycatch lbs per lb of Groundfish				
Slope RKF	100-200FM	JAN-FEB 2002	11	55.042	39.797	65.633	42.047	0.121	0.083	0.144	0.086	0.098	0.067	0.117	0.068
Slope RKF	100-200FM	MAR-APR 2002	4	73.407	51.350	94.213	64.476	0.111	0.063	0.143	0.078	0.082	0.048	0.105	0.059
Slope RKF	100-200FM	MAY-JUN 2002	13	43.226	20.844	54.538	22.731	0.073	0.038	0.092	0.043	0.063	0.032	0.080	0.036
Slope RKF	100-200FM	JUL-AUG 2002	4	5.925	5.925	5.925	5.925	0.007	0.007	0.007	0.007	0.006	0.006	0.006	0.006
Slope RKF	>200FM	SEP-OCT 2001	1	323.736	---	323.736	---	1.191	---	1.191	---	0.639	---	0.639	---
Flatfish	0-100FM	SEP-OCT 2001	136	101.232	34.667	113.193	34.849	0.475	0.165	0.531	0.167	0.401	0.140	0.448	0.142
Flatfish	0-100FM	NOV-DEC 2001	82	4.498	3.241	4.498	3.241	0.025	0.018	0.025	0.018	0.022	0.016	0.022	0.016
Flatfish	0-100FM	JAN-FEB 2002	20	1.297	0.937	1.297	0.937	0.007	0.005	0.007	0.005	0.005	0.004	0.005	0.004
Flatfish	0-100FM	MAR-APR 2002	191	38.313	7.518	39.410	7.603	0.172	0.036	0.177	0.036	0.142	0.029	0.146	0.029
Flatfish	0-100FM	MAY-JUN 2002	429	135.326	25.315	140.239	25.635	0.339	0.069	0.351	0.070	0.232	0.046	0.240	0.047
Flatfish	0-100FM	JUL-AUG 2002	491	237.783	40.569	240.505	40.562	0.516	0.102	0.522	0.102	0.405	0.077	0.409	0.077
Flatfish	100-200FM	SEP-OCT 2001	23	77.893	26.635	139.971	39.774	0.182	0.070	0.328	0.111	0.147	0.055	0.265	0.085
Flatfish	100-200FM	NOV-DEC 2001	26	45.855	15.347	45.855	15.347	0.072	0.025	0.072	0.025	0.070	0.024	0.070	0.024
Flatfish	100-200FM	JAN-FEB 2002	74	26.344	6.418	30.231	6.635	0.066	0.017	0.076	0.017	0.059	0.015	0.068	0.015
Flatfish	100-200FM	MAR-APR 2002	33	32.504	10.797	37.153	10.863	0.127	0.047	0.145	0.048	0.090	0.033	0.103	0.035
Flatfish	100-200FM	MAY-JUN 2002	4	78.498	69.799	97.047	71.013	0.643	0.580	0.794	0.610	0.365	0.325	0.451	0.332
Flatfish	100-200FM	JUL-AUG 2002	21	59.590	50.243	142.299	61.283	0.031	0.026	0.074	0.033	0.024	0.020	0.056	0.025
Flatfish	>200FM	JAN-FEB 2002	48	30.676	12.972	50.684	16.879	0.053	0.024	0.087	0.033	0.047	0.021	0.077	0.029
Flatfish	>200FM	MAR-APR 2002	22	56.374	26.844	78.692	27.971	0.064	0.034	0.089	0.039	0.052	0.027	0.073	0.030
Flatfish	>200FM	JUL-AUG 2002	1	206.065	---	239.443	---	0.298	---	0.346	---	0.216	---	0.250	---
Bocaccio															
DTS	0-100FM	SEP-OCT 2001	37	2.835	2.835	2.835	2.835	0.008	0.008	0.008	0.008	0.006	0.006	0.006	0.006
DTS	0-100FM	JAN-FEB 2002	1	-	---	-	---	-	---	-	---	-	---	-	---
DTS	0-100FM	MAR-APR 2002	44	0.160	0.160	0.160	0.160	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
DTS	0-100FM	MAY-JUN 2002	121	-	95.241	0.090	0.068	-	0.365	0.000	0.000	-	0.239	0.000	0.000
DTS	0-100FM	JUL-AUG 2002	59	-	47.952	-	47.952	-	0.111	-	0.111	-	0.076	-	0.076
DTS	100-200FM	SEP-OCT 2001	38	-	4.183	0.310	0.219	-	0.016	0.001	0.001	-	0.012	0.001	0.001
DTS	100-200FM	JAN-FEB 2002	12	-	53.514	-	53.514	-	0.100	-	0.100	-	0.070	-	0.070
DTS	100-200FM	MAR-APR 2002	39	-	30.403	0.081	0.081	-	0.054	0.000	0.000	-	0.043	0.000	0.000
DTS	100-200FM	MAY-JUN 2002	33	0.094	0.094	0.112	0.095	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
DTS	100-200FM	JUL-AUG 2002	26	-	18.583	0.138	0.138	-	0.037	0.000	0.000	-	0.029	0.000	0.000
DTS	>200FM	SEP-OCT 2001	80	-	0.658	-	0.658	-	0.004	-	0.004	-	0.004	-	0.004
DTS	>200FM	JAN-FEB 2002	176	-	3.171	-	3.171	-	0.010	-	0.010	-	0.009	-	0.009
DTS	>200FM	MAR-APR 2002	255	-	5.034	-	5.034	-	0.018	-	0.018	-	0.017	-	0.017
DTS	>200FM	MAY-JUN 2002	64	-	5.133	-	5.133	-	0.023	-	0.023	-	0.022	-	0.022
DTS	>200FM	JUL-AUG 2002	14	-	8.485	-	8.485	-	0.035	-	0.035	-	0.033	-	0.033
Shelf RKF	0-100FM	SEP-OCT 2001	6	-	55.678	-	89.447	-	0.300	-	0.454	-	0.197	-	0.302
Shelf RKF	0-100FM	NOV-DEC 2001	54	0.837	0.360	0.837	0.360	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
Shelf RKF	0-100FM	MAR-APR 2002	8	0.653	0.653	0.653	0.653	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001
Shelf RKF	0-100FM	MAY-JUN 2002	31	-	8.888	-	9.239	-	0.014	-	0.015	-	0.012	-	0.012

Appendix Table IV.A. Continued. **NOTE: BE ESPECIALLY CAUTIOUS WHEN INTERPRETING THE ESTIMATES THAT ARE CALCULATED WITH LESS THAN 10 TOWS**

Strategy	Depth Range	Period	Number of Tows	Discarded lbs per hr	s.e.	Bycatch lbs per hr	s.e.	Discarded Target Species	s.e.	Bycatch Target Species	s.e.	Discarded lbs per lb of Groundfish	s.e.	Bycatch lbs per lb of Groundfish	s.e.
					Discarded lbs per hr		Discarded lbs per lb Target Species		Discarded lbs per lb Target Species		Discarded lbs per lb of Groundfish		Bycatch lbs per lb of Groundfish		
					Discarded lbs per hr		Discarded lbs per lb Target Species		Discarded lbs per lb Target Species		Discarded lbs per lb of Groundfish		Bycatch lbs per lb of Groundfish		
Shelf RKF	0-100FM	JUL-AUG 2002	37	-	8.536	-	8.596	-	0.030	-	0.031	-	0.017	-	0.017
Shelf RKF	100-200FM	MAR-APR 2002	1	-	---	-	---	-	---	-	---	-	---	-	---
Shelf RKF	100-200FM	MAY-JUN 2002	1	-	---	-	---	-	---	-	---	-	---	-	---
Shelf RKF	100-200FM	JUL-AUG 2002	1	-	---	-	---	-	---	-	---	-	---	-	---
Slope RKF	0-100FM	SEP-OCT 2001	1	1.383	---	1.383	---	0.002	---	0.002	---	0.002	---	0.002	---
Slope RKF	0-100FM	MAY-JUN 2002	2	-	64.211	2.525	2.525	-	0.163	0.006	0.006	-	0.096	0.004	0.004
Slope RKF	100-200FM	SEP-OCT 2001	5	-	5.667	-	26.094	-	0.025	-	0.126	-	0.016	-	0.083
Slope RKF	100-200FM	JAN-FEB 2002	11	2.074	1.723	2.074	1.723	0.005	0.004	0.005	0.004	0.004	0.003	0.004	0.003
Slope RKF	100-200FM	MAR-APR 2002	4	-	51.350	-	64.476	-	0.063	-	0.078	-	0.048	-	0.059
Slope RKF	100-200FM	MAY-JUN 2002	13	-	20.844	-	22.731	-	0.038	-	0.043	-	0.032	-	0.036
Slope RKF	100-200FM	JUL-AUG 2002	4	6.696	6.696	6.696	6.696	0.008	0.008	0.008	0.008	0.007	0.007	0.007	0.007
Slope RKF	>200FM	SEP-OCT 2001	1	-	---	-	---	-	---	-	---	-	---	-	---
Flatfish	0-100FM	SEP-OCT 2001	136	0.009	0.009	0.065	0.033	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
Flatfish	0-100FM	NOV-DEC 2001	82	0.009	0.009	0.009	0.009	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
Flatfish	0-100FM	JAN-FEB 2002	20	0.251	0.251	0.251	0.251	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001
Flatfish	0-100FM	MAR-APR 2002	191	1.573	0.676	1.825	0.711	0.007	0.003	0.008	0.003	0.006	0.003	0.007	0.003
Flatfish	0-100FM	MAY-JUN 2002	429	0.011	0.010	0.061	0.026	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
Flatfish	0-100FM	JUL-AUG 2002	491	-	40.569	1.596	0.815	-	0.102	0.003	0.002	-	0.077	0.003	0.001
Flatfish	100-200FM	SEP-OCT 2001	23	-	26.635	-	39.774	-	0.070	-	0.111	-	0.055	-	0.085
Flatfish	100-200FM	NOV-DEC 2001	26	-	15.347	-	15.347	-	0.025	-	0.025	-	0.024	-	0.024
Flatfish	100-200FM	JAN-FEB 2002	74	0.502	0.233	0.502	0.233	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001
Flatfish	100-200FM	MAR-APR 2002	33	-	10.797	0.075	0.075	-	0.047	0.000	0.000	-	0.033	0.000	0.000
Flatfish	100-200FM	MAY-JUN 2002	4	-	69.799	-	71.013	-	0.580	-	0.610	-	0.325	-	0.332
Flatfish	100-200FM	JUL-AUG 2002	21	-	50.243	-	61.283	-	0.026	-	0.033	-	0.020	-	0.025
Flatfish	>200FM	JAN-FEB 2002	48	0.088	0.074	0.088	0.074	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
Flatfish	>200FM	MAR-APR 2002	22	-	26.844	-	27.971	-	0.034	-	0.039	-	0.027	-	0.030
Flatfish	>200FM	JUL-AUG 2002	1	-	---	-	---	-	---	-	---	-	---	-	---
Chilipepper															
DTS	0-100FM	SEP-OCT 2001	37	0.879	0.746	0.879	0.746	0.002	0.002	0.002	0.002	0.002	0.002	0.002	0.002
DTS	0-100FM	JAN-FEB 2002	1	-	---	-	---	-	---	-	---	-	---	-	---
DTS	0-100FM	MAR-APR 2002	44	-	0.160	-	0.160	-	0.000	-	0.000	-	0.000	-	0.000
DTS	0-100FM	MAY-JUN 2002	121	0.126	0.098	0.928	0.724	0.000	0.000	0.004	0.003	0.000	0.000	0.002	0.002
DTS	0-100FM	JUL-AUG 2002	59	-	47.952	-	47.952	-	0.111	-	0.111	-	0.076	-	0.076
DTS	100-200FM	SEP-OCT 2001	38	0.111	0.041	0.111	0.041	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
DTS	100-200FM	JAN-FEB 2002	12	-	53.514	-	53.514	-	0.100	-	0.100	-	0.070	-	0.070
DTS	100-200FM	MAR-APR 2002	39	0.190	0.133	0.226	0.141	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
DTS	100-200FM	MAY-JUN 2002	33	0.626	0.612	0.631	0.611	0.002	0.002	0.002	0.002	0.001	0.001	0.001	0.001
DTS	100-200FM	JUL-AUG 2002	26	-	18.583	0.022	0.022	-	0.037	0.000	0.000	-	0.029	0.000	0.000
DTS	>200FM	SEP-OCT 2001	80	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
DTS	>200FM	JAN-FEB 2002	176	-	3.171	-	3.171	-	0.010	-	0.010	-	0.009	-	0.009

Appendix Table IV.A. Continued. **NOTE: BE ESPECIALLY CAUTIOUS WHEN INTERPRETING THE ESTIMATES THAT ARE CALCULATED WITH LESS THAN 10 TOWS**

Strategy	Depth Range	Period	Number of Tows	Discarded lbs per hr	s.e.	Bycatch lbs per hr	s.e.	Discarded Target Species	s.e.	Bycatch Target Species	s.e.	Discarded Groundfish	s.e.	Bycatch Groundfish	s.e.
					Discarded lbs per hr		Bycatch lbs per hr		Discarded lbs per lb of Groundfish		Bycatch lbs per lb of Groundfish				
DTS	>200FM	MAR-APR 2002	255	-	5.034	-	5.034	-	0.018	-	0.018	-	0.017	-	0.017
DTS	>200FM	MAY-JUN 2002	64	-	5.133	0.006	0.006	-	0.023	0.000	0.000	-	0.022	0.000	0.000
DTS	>200FM	JUL-AUG 2002	14	-	8.485	-	8.485	-	0.035	-	0.035	-	0.033	-	0.033
Shelf RKF	0-100FM	SEP-OCT 2001	6	-	55.678	-	89.447	-	0.300	-	0.454	-	0.197	-	0.302
Shelf RKF	0-100FM	NOV-DEC 2001	54	0.005	0.005	0.005	0.005	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
Shelf RKF	0-100FM	MAR-APR 2002	8	-	0.653	-	0.653	-	0.001	-	0.001	-	0.001	-	0.001
Shelf RKF	0-100FM	MAY-JUN 2002	31	-	8.888	-	9.239	-	0.014	-	0.015	-	0.012	-	0.012
Shelf RKF	0-100FM	JUL-AUG 2002	37	5.024	2.984	5.024	2.984	0.008	0.006	0.008	0.006	0.006	0.004	0.006	0.004
Shelf RKF	100-200FM	MAR-APR 2002	1	-	---	-	---	-	---	-	---	-	---	-	---
Shelf RKF	100-200FM	MAY-JUN 2002	1	-	---	-	---	-	---	-	---	-	---	-	---
Shelf RKF	100-200FM	JUL-AUG 2002	1	-	---	-	---	-	---	-	---	-	---	-	---
Slope RKF	0-100FM	SEP-OCT 2001	1	-	---	-	---	-	---	-	---	-	---	-	---
Slope RKF	0-100FM	MAY-JUN 2002	2	4.100	2.104	16.800	9.178	0.010	0.006	0.042	0.024	0.006	0.003	0.025	0.013
Slope RKF	100-200FM	SEP-OCT 2001	5	-	5.667	-	26.094	-	0.025	-	0.126	-	0.016	-	0.083
Slope RKF	100-200FM	JAN-FEB 2002	11	38.158	38.133	38.158	38.133	0.084	0.084	0.084	0.084	0.068	0.068	0.068	0.068
Slope RKF	100-200FM	MAR-APR 2002	4	-	51.350	-	64.476	-	0.063	-	0.078	-	0.048	-	0.059
Slope RKF	100-200FM	MAY-JUN 2002	13	0.324	0.324	0.478	0.478	0.001	0.001	0.001	0.001	0.000	0.000	0.001	0.001
Slope RKF	100-200FM	JUL-AUG 2002	4	-	6.696	-	6.696	-	0.008	-	0.008	-	0.007	-	0.007
Slope RKF	>200FM	SEP-OCT 2001	1	-	---	-	---	-	---	-	---	-	---	-	---
Flatfish	0-100FM	SEP-OCT 2001	136	0.352	0.236	0.352	0.236	0.002	0.001	0.002	0.001	0.001	0.001	0.001	0.001
Flatfish	0-100FM	NOV-DEC 2001	82	-	0.009	-	0.009	-	0.000	-	0.000	-	0.000	-	0.000
Flatfish	0-100FM	JAN-FEB 2002	20	0.097	0.097	0.097	0.097	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
Flatfish	0-100FM	MAR-APR 2002	191	1.766	1.399	1.766	1.399	0.008	0.006	0.008	0.006	0.007	0.005	0.007	0.005
Flatfish	0-100FM	MAY-JUN 2002	429	0.302	0.302	0.310	0.302	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001
Flatfish	0-100FM	JUL-AUG 2002	491	1.150	1.144	1.150	1.144	0.002	0.002	0.002	0.002	0.002	0.002	0.002	0.002
Flatfish	100-200FM	SEP-OCT 2001	23	0.058	0.058	0.058	0.058	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
Flatfish	100-200FM	NOV-DEC 2001	26	-	15.347	-	15.347	-	0.025	-	0.025	-	0.024	-	0.024
Flatfish	100-200FM	JAN-FEB 2002	74	0.266	0.258	0.266	0.258	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001
Flatfish	100-200FM	MAR-APR 2002	33	0.007	0.007	0.007	0.007	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
Flatfish	100-200FM	MAY-JUN 2002	4	-	69.799	-	71.013	-	0.580	-	0.610	-	0.325	-	0.332
Flatfish	100-200FM	JUL-AUG 2002	21	-	50.243	-	61.283	-	0.026	-	0.033	-	0.020	-	0.025
Flatfish	>200FM	JAN-FEB 2002	48	-	0.074	-	0.074	-	0.000	-	0.000	-	0.000	-	0.000
Flatfish	>200FM	MAR-APR 2002	22	0.006	0.006	0.006	0.006	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
Flatfish	>200FM	JUL-AUG 2002	1	-	---	-	---	-	---	-	---	-	---	-	---
Canary RKF															
DTS	0-100FM	SEP-OCT 2001	37	1.067	0.423	2.045	0.653	0.003	0.001	0.006	0.002	0.002	0.001	0.004	0.001
DTS	0-100FM	JAN-FEB 2002	1	251.314	---	251.314	---	0.282	---	0.282	---	0.207	---	0.207	---
DTS	0-100FM	MAR-APR 2002	44	4.668	2.807	8.200	3.057	0.013	0.008	0.023	0.009	0.008	0.005	0.014	0.005
DTS	0-100FM	MAY-JUN 2002	121	0.401	0.156	1.681	0.451	0.002	0.001	0.006	0.002	0.001	0.000	0.004	0.001
DTS	0-100FM	JUL-AUG 2002	59	0.803	0.374	3.818	1.933	0.002	0.001	0.008	0.004	0.001	0.001	0.006	0.003

Appendix Table IV.A. Continued. **NOTE: BE ESPECIALLY CAUTIOUS WHEN INTERPRETING THE ESTIMATES THAT ARE CALCULATED WITH LESS THAN 10 TOWS**

Strategy	Depth Range	Period	Number of Tows	Discarded lbs per hr	s.e.	Bycatch lbs per hr	s.e.	Discarded lbs per lb Target Species	s.e.	Bycatch lbs per lb Target Species	s.e.	Discarded lbs per lb of Groundfish	s.e.	Bycatch lbs per lb of Groundfish	s.e.
					Discarded lbs per hr		Bycatch lbs per hr		Discarded lbs per lb of Groundfish		Bycatch lbs per lb of Groundfish				
DTS	100-200FM	SEP-OCT 2001	38	0.027	0.023	2.858	1.684	0.000	0.000	0.011	0.006	0.000	0.000	0.008	0.005
DTS	100-200FM	JAN-FEB 2002	12	0.847	0.847	0.847	0.847	0.002	0.002	0.002	0.002	0.001	0.001	0.001	0.001
DTS	100-200FM	MAR-APR 2002	39	0.531	0.205	0.572	0.207	0.001	0.000	0.001	0.000	0.001	0.000	0.001	0.000
DTS	100-200FM	MAY-JUN 2002	33	0.021	0.021	0.106	0.087	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
DTS	100-200FM	JUL-AUG 2002	26	-	18.583	0.041	0.041	-	0.037	0.000	0.000	-	0.029	0.000	0.000
DTS	>200FM	SEP-OCT 2001	80	-	0.000	-	0.000	-	0.000	-	0.000	-	0.000	-	0.000
DTS	>200FM	JAN-FEB 2002	176	0.024	0.017	0.024	0.017	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
DTS	>200FM	MAR-APR 2002	255	-	5.034	-	5.034	-	0.018	-	0.018	-	0.017	-	0.017
DTS	>200FM	MAY-JUN 2002	64	-	5.133	-	0.006	-	0.023	-	0.000	-	0.022	-	0.000
DTS	>200FM	JUL-AUG 2002	14	-	8.485	-	8.485	-	0.035	-	0.035	-	0.033	-	0.033
Shelf RKF	0-100FM	SEP-OCT 2001	6	5.333	5.021	5.333	5.021	0.022	0.021	0.022	0.021	0.015	0.015	0.015	0.015
Shelf RKF	0-100FM	NOV-DEC 2001	54	17.436	11.542	17.436	11.542	0.008	0.005	0.008	0.005	0.008	0.005	0.008	0.005
Shelf RKF	0-100FM	MAR-APR 2002	8	0.963	0.679	0.963	0.679	0.002	0.001	0.002	0.001	0.002	0.001	0.002	0.001
Shelf RKF	0-100FM	MAY-JUN 2002	31	2.127	0.839	2.127	0.839	0.003	0.001	0.003	0.001	0.003	0.001	0.003	0.001
Shelf RKF	0-100FM	JUL-AUG 2002	37	2.198	1.138	2.198	1.138	0.004	0.003	0.004	0.003	0.003	0.002	0.003	0.002
Shelf RKF	100-200FM	MAR-APR 2002	1	-	---	-	---	-	---	-	---	-	---	-	---
Shelf RKF	100-200FM	MAY-JUN 2002	1	-	---	-	---	-	---	-	---	-	---	-	---
Shelf RKF	100-200FM	JUL-AUG 2002	1	-	---	-	---	-	---	-	---	-	---	-	---
Slope RKF	0-100FM	SEP-OCT 2001	1	3.889	---	3.889	---	0.006	---	0.006	---	0.005	---	0.005	---
Slope RKF	0-100FM	MAY-JUN 2002	2	-	2.104	4.025	1.601	-	0.006	0.010	0.004	-	0.003	0.006	0.002
Slope RKF	100-200FM	SEP-OCT 2001	5	-	5.667	-	26.094	-	0.025	-	0.126	-	0.016	-	0.083
Slope RKF	100-200FM	JAN-FEB 2002	11	2.183	1.961	2.183	1.961	0.005	0.004	0.005	0.004	0.004	0.003	0.004	0.003
Slope RKF	100-200FM	MAR-APR 2002	4	-	51.350	-	64.476	-	0.063	-	0.078	-	0.048	-	0.059
Slope RKF	100-200FM	MAY-JUN 2002	13	2.527	1.643	2.527	1.643	0.004	0.003	0.004	0.003	0.004	0.002	0.004	0.002
Slope RKF	100-200FM	JUL-AUG 2002	4	-	6.696	-	6.696	-	0.008	-	0.008	-	0.007	-	0.007
Slope RKF	>200FM	SEP-OCT 2001	1	-	---	-	---	-	---	-	---	-	---	-	---
Flatfish	0-100FM	SEP-OCT 2001	136	1.080	0.357	1.843	0.424	0.005	0.002	0.009	0.002	0.004	0.001	0.007	0.002
Flatfish	0-100FM	NOV-DEC 2001	82	2.527	0.610	2.527	0.610	0.014	0.003	0.014	0.003	0.012	0.003	0.012	0.003
Flatfish	0-100FM	JAN-FEB 2002	20	14.720	4.424	14.720	4.424	0.074	0.047	0.074	0.047	0.055	0.028	0.055	0.028
Flatfish	0-100FM	MAR-APR 2002	191	4.447	1.150	6.785	1.344	0.020	0.005	0.031	0.006	0.016	0.004	0.025	0.005
Flatfish	0-100FM	MAY-JUN 2002	429	0.617	0.293	2.758	0.652	0.002	0.001	0.007	0.002	0.001	0.001	0.005	0.001
Flatfish	0-100FM	JUL-AUG 2002	491	0.419	0.174	3.665	0.810	0.001	0.000	0.008	0.002	0.001	0.000	0.006	0.001
Flatfish	100-200FM	SEP-OCT 2001	23	0.202	0.202	0.255	0.207	0.000	0.000	0.001	0.000	0.000	0.000	0.000	0.000
Flatfish	100-200FM	NOV-DEC 2001	26	0.180	0.180	0.180	0.180	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
Flatfish	100-200FM	JAN-FEB 2002	74	0.599	0.429	0.599	0.429	0.002	0.001	0.002	0.001	0.001	0.001	0.001	0.001
Flatfish	100-200FM	MAR-APR 2002	33	1.543	0.457	2.784	0.701	0.006	0.002	0.011	0.003	0.004	0.001	0.008	0.002
Flatfish	100-200FM	MAY-JUN 2002	4	1.329	1.329	1.329	1.329	0.011	0.011	0.011	0.011	0.006	0.006	0.006	0.006
Flatfish	100-200FM	JUL-AUG 2002	21	-	50.243	0.166	0.115	-	0.026	0.000	0.000	-	0.020	0.000	0.000
Flatfish	>200FM	JAN-FEB 2002	48	0.025	0.025	0.187	0.163	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
Flatfish	>200FM	MAR-APR 2002	22	-	0.006	-	0.006	-	0.000	-	0.000	-	0.000	-	0.000
Flatfish	>200FM	JUL-AUG 2002	1	-	---	-	---	-	---	-	---	-	---	-	---

Appendix Table IV.A. Continued. **NOTE: BE ESPECIALLY CAUTIOUS WHEN INTERPRETING THE ESTIMATES THAT ARE CALCULATED WITH LESS THAN 10 TOWS**

Strategy	Depth Range	Period	Number of Tows	Discarded lbs per hr	s.e.	Bycatch lbs per hr	s.e.	Discarded	s.e.	Bycatch	s.e.	Discarded	s.e.	Bycatch	s.e.
					Discarded		lbs per lb	Discarded	lbs per lb	Discarded	lbs per lb	Discarded	lbs per lb	Discarded	lbs per lb
					Target Species		Target Species	Target Species	Target Species	Groundfish	Groundfish	Groundfish	Groundfish		
Cowcod															
DTS	0-100FM	SEP-OCT 2001	37	-	0.423	-	0.653	-	0.001	-	0.002	-	0.001	-	0.001
DTS	0-100FM	JAN-FEB 2002	1	-	---	-	---	-	---	-	---	-	---	-	---
DTS	0-100FM	MAR-APR 2002	44	-	2.807	-	3.057	-	0.008	-	0.009	-	0.005	-	0.005
DTS	0-100FM	MAY-JUN 2002	121	-	0.156	-	0.451	-	0.001	-	0.002	-	0.000	-	0.001
DTS	0-100FM	JUL-AUG 2002	59	-	0.374	-	1.933	-	0.001	-	0.004	-	0.001	-	0.003
DTS	100-200FM	SEP-OCT 2001	38	-	0.023	0.024	0.024	-	0.000	0.000	0.000	-	0.000	0.000	0.000
DTS	100-200FM	JAN-FEB 2002	12	-	0.847	-	0.847	-	0.002	-	0.002	-	0.001	-	0.001
DTS	100-200FM	MAR-APR 2002	39	-	0.205	-	0.207	-	0.000	-	0.000	-	0.000	-	0.000
DTS	100-200FM	MAY-JUN 2002	33	-	0.021	-	0.087	-	0.000	-	0.000	-	0.000	-	0.000
DTS	100-200FM	JUL-AUG 2002	26	-	18.583	-	0.041	-	0.037	-	0.000	-	0.029	-	0.000
DTS	>200FM	SEP-OCT 2001	80	-	0.000	-	0.000	-	0.000	-	0.000	-	0.000	-	0.000
DTS	>200FM	JAN-FEB 2002	176	-	0.017	-	0.017	-	0.000	-	0.000	-	0.000	-	0.000
DTS	>200FM	MAR-APR 2002	255	-	5.034	-	5.034	-	0.018	-	0.018	-	0.017	-	0.017
DTS	>200FM	MAY-JUN 2002	64	-	5.133	-	0.006	-	0.023	-	0.000	-	0.022	-	0.000
DTS	>200FM	JUL-AUG 2002	14	-	8.485	-	8.485	-	0.035	-	0.035	-	0.033	-	0.033
Shelf RKF	0-100FM	SEP-OCT 2001	6	-	5.021	-	5.021	-	0.021	-	0.021	-	0.015	-	0.015
Shelf RKF	0-100FM	NOV-DEC 2001	54	-	11.542	-	11.542	-	0.005	-	0.005	-	0.005	-	0.005
Shelf RKF	0-100FM	MAR-APR 2002	8	-	0.679	-	0.679	-	0.001	-	0.001	-	0.001	-	0.001
Shelf RKF	0-100FM	MAY-JUN 2002	31	-	0.839	-	0.839	-	0.001	-	0.001	-	0.001	-	0.001
Shelf RKF	0-100FM	JUL-AUG 2002	37	-	1.138	-	1.138	-	0.003	-	0.003	-	0.002	-	0.002
Shelf RKF	100-200FM	MAR-APR 2002	1	-	---	-	---	-	---	-	---	-	---	-	---
Shelf RKF	100-200FM	MAY-JUN 2002	1	-	---	-	---	-	---	-	---	-	---	-	---
Shelf RKF	100-200FM	JUL-AUG 2002	1	-	---	-	---	-	---	-	---	-	---	-	---
Slope RKF	0-100FM	SEP-OCT 2001	1	-	---	-	---	-	---	-	---	-	---	-	---
Slope RKF	0-100FM	MAY-JUN 2002	2	-	2.104	-	1.601	-	0.006	-	0.004	-	0.003	-	0.002
Slope RKF	100-200FM	SEP-OCT 2001	5	-	5.667	-	26.094	-	0.025	-	0.126	-	0.016	-	0.083
Slope RKF	100-200FM	JAN-FEB 2002	11	-	1.961	-	1.961	-	0.004	-	0.004	-	0.003	-	0.003
Slope RKF	100-200FM	MAR-APR 2002	4	-	51.350	-	64.476	-	0.063	-	0.078	-	0.048	-	0.059
Slope RKF	100-200FM	MAY-JUN 2002	13	-	1.643	-	1.643	-	0.003	-	0.003	-	0.002	-	0.002
Slope RKF	100-200FM	JUL-AUG 2002	4	-	6.696	-	6.696	-	0.008	-	0.008	-	0.007	-	0.007
Slope RKF	>200FM	SEP-OCT 2001	1	-	---	-	---	-	---	-	---	-	---	-	---
Flatfish	0-100FM	SEP-OCT 2001	136	-	0.357	-	0.424	-	0.002	-	0.002	-	0.001	-	0.002
Flatfish	0-100FM	NOV-DEC 2001	82	-	0.610	-	0.610	-	0.003	-	0.003	-	0.003	-	0.003
Flatfish	0-100FM	JAN-FEB 2002	20	-	4.424	-	4.424	-	0.047	-	0.047	-	0.028	-	0.028
Flatfish	0-100FM	MAR-APR 2002	191	-	1.150	-	1.344	-	0.005	-	0.006	-	0.004	-	0.005
Flatfish	0-100FM	MAY-JUN 2002	429	-	0.293	-	0.652	-	0.001	-	0.002	-	0.001	-	0.001
Flatfish	0-100FM	JUL-AUG 2002	491	-	0.174	-	0.810	-	0.000	-	0.002	-	0.000	-	0.001
Flatfish	100-200FM	SEP-OCT 2001	23	-	0.202	-	0.207	-	0.000	-	0.000	-	0.000	-	0.000
Flatfish	100-200FM	NOV-DEC 2001	26	-	0.180	-	0.180	-	0.000	-	0.000	-	0.000	-	0.000
Flatfish	100-200FM	JAN-FEB 2002	74	-	0.429	-	0.429	-	0.001	-	0.001	-	0.001	-	0.001

Appendix Table IV.A. Continued. **NOTE: BE ESPECIALLY CAUTIOUS WHEN INTERPRETING THE ESTIMATES THAT ARE CALCULATED WITH LESS THAN 10 TOWS**

Strategy	Depth Range	Period	Number of Tows	Discarded lbs per hr	s.e.	Bycatch lbs per hr	s.e.	Discarded Target Species	s.e.	Bycatch Target Species	s.e.	Discarded lbs per lb of Groundfish	s.e.	Bycatch lbs per lb of Groundfish	s.e.
					Discarded lbs per hr		Bycatch lbs per hr		Discarded lbs per lb of Groundfish		Bycatch lbs per lb of Groundfish				
Flatfish	100-200FM	MAR-APR 2002	33	0.050	0.050	0.050	0.050	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
Flatfish	100-200FM	MAY-JUN 2002	4	-	1.329	-	1.329	-	0.011	-	0.011	-	0.006	-	0.006
Flatfish	100-200FM	JUL-AUG 2002	21	-	50.243	-	0.115	-	0.026	-	0.000	-	0.020	-	0.000
Flatfish	>200FM	JAN-FEB 2002	48	-	0.025	-	0.163	-	0.000	-	0.000	-	0.000	-	0.000
Flatfish	>200FM	MAR-APR 2002	22	-	0.006	-	0.006	-	0.000	-	0.000	-	0.000	-	0.000
Flatfish	>200FM	JUL-AUG 2002	1	-	---	-	---	-	---	-	---	-	---	-	---
Widow RKF															
DTS	0-100FM	SEP-OCT 2001	37	-	0.423	0.082	0.082	-	0.001	0.000	0.000	-	0.001	0.000	0.000
DTS	0-100FM	JAN-FEB 2002	1	-	---	-	---	-	---	-	---	-	---	-	---
DTS	0-100FM	MAR-APR 2002	44	-	2.807	-	3.057	-	0.008	-	0.009	-	0.005	-	0.005
DTS	0-100FM	MAY-JUN 2002	121	0.002	0.002	0.012	0.010	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
DTS	0-100FM	JUL-AUG 2002	59	-	0.374	-	1.933	-	0.001	-	0.004	-	0.001	-	0.003
DTS	100-200FM	SEP-OCT 2001	38	0.100	0.053	0.222	0.076	0.000	0.000	0.001	0.000	0.000	0.000	0.001	0.000
DTS	100-200FM	JAN-FEB 2002	12	-	0.847	-	0.847	-	0.002	-	0.002	-	0.001	-	0.001
DTS	100-200FM	MAR-APR 2002	39	-	0.205	0.215	0.215	-	0.000	0.000	0.000	-	0.000	0.000	0.000
DTS	100-200FM	MAY-JUN 2002	33	-	0.021	0.038	0.027	-	0.000	0.000	0.000	-	0.000	0.000	0.000
DTS	100-200FM	JUL-AUG 2002	26	-	18.583	0.254	0.199	-	0.037	0.000	0.000	-	0.029	0.000	0.000
DTS	>200FM	SEP-OCT 2001	80	-	0.000	-	0.000	-	0.000	-	0.000	-	0.000	-	0.000
DTS	>200FM	JAN-FEB 2002	176	0.006	0.006	0.006	0.006	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
DTS	>200FM	MAR-APR 2002	255	0.001	0.001	0.001	0.001	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
DTS	>200FM	MAY-JUN 2002	64	-	5.133	-	0.006	-	0.023	-	0.000	-	0.022	-	0.000
DTS	>200FM	JUL-AUG 2002	14	-	8.485	-	8.485	-	0.035	-	0.035	-	0.033	-	0.033
Shelf RKF	0-100FM	SEP-OCT 2001	6	-	5.021	-	5.021	-	0.021	-	0.021	-	0.015	-	0.015
Shelf RKF	0-100FM	NOV-DEC 2001	54	0.246	0.135	0.246	0.135	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
Shelf RKF	0-100FM	MAR-APR 2002	8	0.730	0.568	0.730	0.568	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001
Shelf RKF	0-100FM	MAY-JUN 2002	31	1.664	1.563	1.664	1.563	0.003	0.002	0.003	0.002	0.002	0.002	0.002	0.002
Shelf RKF	0-100FM	JUL-AUG 2002	37	-	1.138	-	1.138	-	0.003	-	0.003	-	0.002	-	0.002
Shelf RKF	100-200FM	MAR-APR 2002	1	-	---	-	---	-	---	-	---	-	---	-	---
Shelf RKF	100-200FM	MAY-JUN 2002	1	-	---	-	---	-	---	-	---	-	---	-	---
Shelf RKF	100-200FM	JUL-AUG 2002	1	-	---	-	---	-	---	-	---	-	---	-	---
Slope RKF	0-100FM	SEP-OCT 2001	1	1.893	---	1.893	---	0.003	---	0.003	---	0.003	---	0.003	---
Slope RKF	0-100FM	MAY-JUN 2002	2	-	2.104	7.550	5.792	-	0.006	0.019	0.015	-	0.003	0.011	0.009
Slope RKF	100-200FM	SEP-OCT 2001	5	-	5.667	-	26.094	-	0.025	-	0.126	-	0.016	-	0.083
Slope RKF	100-200FM	JAN-FEB 2002	11	0.184	0.132	0.184	0.132	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
Slope RKF	100-200FM	MAR-APR 2002	4	1.438	1.438	1.438	1.438	0.002	0.002	0.002	0.002	0.002	0.002	0.002	0.002
Slope RKF	100-200FM	MAY-JUN 2002	13	0.727	0.454	0.802	0.454	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001
Slope RKF	100-200FM	JUL-AUG 2002	4	4.859	4.859	4.859	4.859	0.006	0.006	0.006	0.006	0.005	0.005	0.005	0.005
Slope RKF	>200FM	SEP-OCT 2001	1	-	---	-	---	-	---	-	---	-	---	-	---
Flatfish	0-100FM	SEP-OCT 2001	136	0.011	0.009	0.233	0.097	0.000	0.000	0.001	0.000	0.000	0.000	0.001	0.000
Flatfish	0-100FM	NOV-DEC 2001	82	-	0.610	0.015	0.015	-	0.003	0.000	0.000	-	0.003	0.000	0.000

Appendix Table IV.A. Continued. **NOTE: BE ESPECIALLY CAUTIOUS WHEN INTERPRETING THE ESTIMATES THAT ARE CALCULATED WITH LESS THAN 10 TOWS**

Strategy	Depth Range	Period	Number of Tows	Discarded lbs per hr	s.e.	Bycatch lbs per hr	s.e.	Discarded Target Species	s.e.	Discarded lbs per lb Target Species	s.e.	Bycatch Target Species	s.e.	Discarded lbs per lb of Groundfish	s.e.	Bycatch lbs per lb of Groundfish	s.e.
					Discarded lbs per hr		Discarded lbs per hr		Discarded lbs per hr		Discarded lbs per hr		Discarded lbs per hr		Discarded lbs per lb of Groundfish		Bycatch lbs per lb of Groundfish
					---		---		---		---		---		---		---
Flatfish	0-100FM	JAN-FEB 2002	20	0.512	0.311	0.512	0.311	0.003	0.002	0.003	0.002	0.003	0.002	0.002	0.001	0.002	0.001
Flatfish	0-100FM	MAR-APR 2002	191	0.253	0.194	0.516	0.259	0.001	0.001	0.002	0.001	0.002	0.001	0.001	0.001	0.002	0.001
Flatfish	0-100FM	MAY-JUN 2002	429	-	0.293	0.018	0.010	-	0.001	0.000	0.000	0.000	0.000	-	0.001	0.000	0.000
Flatfish	0-100FM	JUL-AUG 2002	491	0.001	0.001	0.048	0.020	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
Flatfish	100-200FM	SEP-OCT 2001	23	-	0.202	0.028	0.028	-	0.000	0.000	0.000	0.000	0.000	-	0.000	0.000	0.000
Flatfish	100-200FM	NOV-DEC 2001	26	0.274	0.155	0.274	0.155	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
Flatfish	100-200FM	JAN-FEB 2002	74	0.138	0.104	0.138	0.104	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
Flatfish	100-200FM	MAR-APR 2002	33	0.059	0.041	0.151	0.066	0.000	0.000	0.001	0.000	0.000	0.000	0.000	0.000	0.000	0.000
Flatfish	100-200FM	MAY-JUN 2002	4	-	1.329	-	1.329	-	0.011	-	0.011	-	0.011	-	0.006	-	0.006
Flatfish	100-200FM	JUL-AUG 2002	21	-	50.243	-	0.115	-	0.026	-	0.000	-	0.000	-	0.020	-	0.000
Flatfish	>200FM	JAN-FEB 2002	48	0.193	0.083	0.193	0.083	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
Flatfish	>200FM	MAR-APR 2002	22	0.772	0.723	0.772	0.723	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001
Flatfish	>200FM	JUL-AUG 2002	1	-	---	-	---	-	---	-	---	-	---	-	---	-	---
Yellowtail RKF																	
DTS	0-100FM	SEP-OCT 2001	37	0.697	0.439	1.099	0.531	0.002	0.001	0.003	0.001	0.003	0.001	0.001	0.001	0.002	0.001
DTS	0-100FM	JAN-FEB 2002	1	40.286	---	40.286	---	0.045	---	0.045	---	0.045	---	0.033	---	0.033	---
DTS	0-100FM	MAR-APR 2002	44	0.170	0.170	9.595	7.891	0.000	0.000	0.027	0.022	0.000	0.000	0.000	0.000	0.016	0.014
DTS	0-100FM	MAY-JUN 2002	121	0.002	0.002	5.403	2.233	0.000	0.000	0.021	0.009	0.000	0.000	0.000	0.000	0.014	0.006
DTS	0-100FM	JUL-AUG 2002	59	0.013	0.013	1.909	1.381	0.000	0.000	0.004	0.003	0.000	0.000	0.000	0.000	0.003	0.002
DTS	100-200FM	SEP-OCT 2001	38	-	0.053	0.040	0.040	-	0.000	0.000	0.000	0.000	-	0.000	0.000	0.000	0.000
DTS	100-200FM	JAN-FEB 2002	12	14.550	14.550	14.550	14.550	0.026	0.026	0.026	0.026	0.026	0.026	0.019	0.019	0.019	0.019
DTS	100-200FM	MAR-APR 2002	39	4.841	3.082	4.901	3.081	0.008	0.005	0.008	0.005	0.008	0.005	0.006	0.004	0.006	0.004
DTS	100-200FM	MAY-JUN 2002	33	-	0.021	0.028	0.028	-	0.000	0.000	0.000	0.000	-	0.000	0.000	0.000	0.000
DTS	100-200FM	JUL-AUG 2002	26	0.028	0.028	0.385	0.322	0.000	0.000	0.001	0.001	0.001	0.001	0.000	0.000	0.001	0.000
DTS	>200FM	SEP-OCT 2001	80	-	0.000	-	0.000	-	0.000	-	0.000	-	0.000	-	0.000	-	0.000
DTS	>200FM	JAN-FEB 2002	176	-	0.006	-	0.006	-	0.000	-	0.000	-	0.000	-	0.000	-	0.000
DTS	>200FM	MAR-APR 2002	255	0.004	0.004	0.004	0.004	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
DTS	>200FM	MAY-JUN 2002	64	-	5.133	-	0.006	-	0.023	-	0.000	-	0.000	-	0.022	-	0.000
DTS	>200FM	JUL-AUG 2002	14	-	8.485	-	8.485	-	0.035	-	0.035	-	0.035	-	0.033	-	0.033
Shelf RKF	0-100FM	SEP-OCT 2001	6	0.222	0.222	0.222	0.222	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001
Shelf RKF	0-100FM	NOV-DEC 2001	54	212.127	118.748	212.127	118.748	0.098	0.055	0.098	0.055	0.098	0.055	0.097	0.055	0.097	0.055
Shelf RKF	0-100FM	MAR-APR 2002	8	-	0.568	-	0.568	-	0.001	-	0.001	-	0.001	-	0.001	-	0.001
Shelf RKF	0-100FM	MAY-JUN 2002	31	72.300	55.044	72.300	55.044	0.111	0.086	0.111	0.086	0.111	0.086	0.092	0.071	0.092	0.071
Shelf RKF	0-100FM	JUL-AUG 2002	37	-	1.138	-	1.138	-	0.003	-	0.003	-	0.003	-	0.002	-	0.002
Shelf RKF	100-200FM	MAR-APR 2002	1	-	---	-	---	-	---	-	---	-	---	-	---	-	---
Shelf RKF	100-200FM	MAY-JUN 2002	1	-	---	-	---	-	---	-	---	-	---	-	---	-	---
Shelf RKF	100-200FM	JUL-AUG 2002	1	-	---	-	---	-	---	-	---	-	---	-	---	-	---
Slope RKF	0-100FM	SEP-OCT 2001	1	80.735	---	80.735	---	0.121	---	0.121	---	0.121	---	0.110	---	0.110	---
Slope RKF	0-100FM	MAY-JUN 2002	2	-	2.104	-	5.792	-	0.006	-	0.015	-	0.015	-	0.003	-	0.009
Slope RKF	100-200FM	SEP-OCT 2001	5	-	5.667	-	26.094	-	0.025	-	0.126	-	0.126	-	0.016	-	0.083

Appendix Table IV.A. Continued. **NOTE: BE ESPECIALLY CAUTIOUS WHEN INTERPRETING THE ESTIMATES THAT ARE CALCULATED WITH LESS THAN 10 TOWS**

Strategy	Depth Range	Period	Number of Tows	s.e.				s.e.				s.e.			
				Discarded lbs per hr	Discarded lbs per hr	Bycatch lbs per hr	Bycatch lbs per hr	Discarded Target	Discarded Target	Bycatch Target	Bycatch Target	Discarded lbs per lb of	Discarded lbs per lb of	Bycatch lbs per lb of	Bycatch lbs per lb of
DTS	>200FM	MAR-APR 2002	255	0.049	0.036	0.101	0.049	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
DTS	>200FM	MAY-JUN 2002	64	1.045	0.967	1.228	0.978	0.004	0.004	0.005	0.004	0.004	0.004	0.005	0.004
DTS	>200FM	JUL-AUG 2002	14	0.013	0.013	0.812	0.799	0.000	0.000	0.003	0.003	0.000	0.000	0.003	0.003
Shelf RKF	0-100FM	SEP-OCT 2001	6	3.195	2.899	3.195	2.899	0.013	0.012	0.013	0.012	0.009	0.009	0.009	0.009
Shelf RKF	0-100FM	NOV-DEC 2001	54	0.361	0.350	0.566	0.405	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
Shelf RKF	0-100FM	MAR-APR 2002	8	-	0.568	-	0.568	-	0.001	-	0.001	-	0.001	-	0.001
Shelf RKF	0-100FM	MAY-JUN 2002	31	0.246	0.225	4.264	4.002	0.000	0.000	0.007	0.006	0.000	0.000	0.005	0.005
Shelf RKF	0-100FM	JUL-AUG 2002	37	2.441	2.219	2.462	2.219	0.004	0.004	0.004	0.004	0.003	0.003	0.003	0.003
Shelf RKF	100-200FM	MAR-APR 2002	1	-	---	5.268	---	-	---	0.035	---	-	---	0.022	---
Shelf RKF	100-200FM	MAY-JUN 2002	1	30.194	---	30.194	---	0.375	---	0.375	---	0.161	---	0.161	---
Shelf RKF	100-200FM	JUL-AUG 2002	1	-	---	-	---	-	---	-	---	-	---	-	---
Slope RKF	0-100FM	SEP-OCT 2001	1	-	---	-	---	-	---	-	---	-	---	-	---
Slope RKF	0-100FM	MAY-JUN 2002	2	83.863	62.820	83.863	62.820	0.212	0.161	0.212	0.161	0.126	0.093	0.126	0.093
Slope RKF	100-200FM	SEP-OCT 2001	5	86.110	57.671	86.110	57.671	0.383	0.291	0.383	0.291	0.243	0.195	0.243	0.195
Slope RKF	100-200FM	JAN-FEB 2002	11	52.350	35.819	52.350	35.819	0.115	0.074	0.115	0.074	0.093	0.059	0.093	0.059
Slope RKF	100-200FM	MAR-APR 2002	4	-	1.438	-	1.438	-	0.002	-	0.002	-	0.002	-	0.002
Slope RKF	100-200FM	MAY-JUN 2002	13	64.379	34.348	64.379	34.348	0.109	0.062	0.109	0.062	0.094	0.053	0.094	0.053
Slope RKF	100-200FM	JUL-AUG 2002	4	-	4.859	-	4.859	-	0.006	-	0.006	-	0.005	-	0.005
Slope RKF	>200FM	SEP-OCT 2001	1	-	---	-	---	-	---	-	---	-	---	-	---
Flatfish	0-100FM	SEP-OCT 2001	136	2.128	0.422	2.231	0.440	0.010	0.002	0.010	0.002	0.008	0.002	0.009	0.002
Flatfish	0-100FM	NOV-DEC 2001	82	-	2.174	-	2.367	-	0.012	-	0.013	-	0.011	-	0.012
Flatfish	0-100FM	JAN-FEB 2002	20	0.235	0.221	0.235	0.221	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001
Flatfish	0-100FM	MAR-APR 2002	191	1.185	0.267	1.185	0.267	0.005	0.001	0.005	0.001	0.004	0.001	0.004	0.001
Flatfish	0-100FM	MAY-JUN 2002	429	0.848	0.326	0.858	0.326	0.002	0.001	0.002	0.001	0.001	0.001	0.001	0.001
Flatfish	0-100FM	JUL-AUG 2002	491	0.198	0.069	0.211	0.069	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
Flatfish	100-200FM	SEP-OCT 2001	23	49.471	17.007	50.410	17.007	0.116	0.045	0.118	0.045	0.094	0.035	0.095	0.035
Flatfish	100-200FM	NOV-DEC 2001	26	65.217	26.086	65.344	26.076	0.102	0.042	0.102	0.042	0.100	0.041	0.100	0.041
Flatfish	100-200FM	JAN-FEB 2002	74	4.763	1.564	5.875	1.596	0.012	0.004	0.015	0.004	0.011	0.004	0.013	0.004
Flatfish	100-200FM	MAR-APR 2002	33	5.804	2.969	5.846	2.967	0.023	0.012	0.023	0.012	0.016	0.009	0.016	0.009
Flatfish	100-200FM	MAY-JUN 2002	4	9.561	9.356	14.965	10.892	0.078	0.077	0.123	0.094	0.044	0.043	0.070	0.051
Flatfish	100-200FM	JUL-AUG 2002	21	1.724	1.724	3.036	2.018	0.001	0.001	0.002	0.001	0.001	0.001	0.001	0.001
Flatfish	>200FM	JAN-FEB 2002	48	4.034	2.443	4.163	2.441	0.007	0.004	0.007	0.004	0.006	0.004	0.006	0.004
Flatfish	>200FM	MAR-APR 2002	22	0.398	0.364	0.398	0.364	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
Flatfish	>200FM	JUL-AUG 2002	1	-	---	-	---	-	---	-	---	-	---	-	---
POP															
DTS	0-100FM	SEP-OCT 2001	37	0.685	0.531	4.783	1.916	0.002	0.001	0.013	0.005	0.001	0.001	0.010	0.004
DTS	0-100FM	JAN-FEB 2002	1	-	---	-	---	-	---	-	---	-	---	-	---
DTS	0-100FM	MAR-APR 2002	44	0.015	0.015	0.109	0.095	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
DTS	0-100FM	MAY-JUN 2002	121	0.006	0.006	0.102	0.062	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
DTS	0-100FM	JUL-AUG 2002	59	-	1.293	5.034	3.160	-	0.003	0.011	0.007	-	0.002	0.007	0.005

Appendix Table IV.A. Continued. **NOTE: BE ESPECIALLY CAUTIOUS WHEN INTERPRETING THE ESTIMATES THAT ARE CALCULATED WITH LESS THAN 10 TOWS**

Strategy	Depth Range	Period	Number of Tows	Discarded lbs per hr	s.e.	Bycatch lbs per hr	s.e.	Discarded Target Species	s.e.	Bycatch Target Species	s.e.	Discarded lbs per lb of Groundfish	s.e.	Bycatch lbs per lb of Groundfish	s.e.
					Discarded lbs per hr		Bycatch lbs per hr		Discarded lbs per lb of Groundfish		Bycatch lbs per lb of Groundfish				
Splitnose RKF															
DTS	0-100FM	SEP-OCT 2001	37	7.335	6.528	7.540	6.526	0.020	0.018	0.021	0.018	0.015	0.014	0.016	0.014
DTS	0-100FM	JAN-FEB 2002	1	-	---	-	---	-	---	-	---	-	---	-	---
DTS	0-100FM	MAR-APR 2002	44	0.684	0.446	0.707	0.451	0.002	0.001	0.002	0.001	0.001	0.001	0.001	0.001
DTS	0-100FM	MAY-JUN 2002	121	0.160	0.098	0.171	0.107	0.001	0.000	0.001	0.000	0.000	0.000	0.000	0.000
DTS	0-100FM	JUL-AUG 2002	59	1.430	1.051	1.430	1.051	0.003	0.002	0.003	0.002	0.002	0.002	0.002	0.002
DTS	100-200FM	SEP-OCT 2001	38	10.784	6.888	10.793	6.897	0.040	0.026	0.040	0.026	0.031	0.020	0.031	0.020
DTS	100-200FM	JAN-FEB 2002	12	4.992	3.268	6.267	4.308	0.009	0.006	0.011	0.008	0.006	0.004	0.008	0.006
DTS	100-200FM	MAR-APR 2002	39	12.738	6.418	13.217	6.428	0.020	0.011	0.021	0.011	0.016	0.008	0.017	0.009
DTS	100-200FM	MAY-JUN 2002	33	23.041	10.330	23.556	10.320	0.062	0.028	0.063	0.028	0.048	0.022	0.049	0.022
DTS	100-200FM	JUL-AUG 2002	26	24.115	14.923	24.448	14.908	0.046	0.029	0.047	0.029	0.036	0.023	0.037	0.023
DTS	>200FM	SEP-OCT 2001	80	0.002	0.002	0.002	0.002	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
DTS	>200FM	JAN-FEB 2002	176	0.369	0.268	0.395	0.268	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001
DTS	>200FM	MAR-APR 2002	255	0.153	0.103	0.167	0.103	0.001	0.000	0.001	0.000	0.000	0.000	0.001	0.000
DTS	>200FM	MAY-JUN 2002	64	0.069	0.044	0.072	0.044	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
DTS	>200FM	JUL-AUG 2002	14	-	0.013	0.051	0.041	-	0.000	0.000	0.000	-	0.000	0.000	0.000
Shelf RKF	0-100FM	SEP-OCT 2001	6	-	2.899	-	5.559	-	0.012	-	0.023	-	0.009	-	0.016
Shelf RKF	0-100FM	NOV-DEC 2001	54	-	0.053	-	0.053	-	0.000	-	0.000	-	0.000	-	0.000
Shelf RKF	0-100FM	MAR-APR 2002	8	-	0.568	-	0.568	-	0.001	-	0.001	-	0.001	-	0.001
Shelf RKF	0-100FM	MAY-JUN 2002	31	0.017	0.017	0.057	0.044	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
Shelf RKF	0-100FM	JUL-AUG 2002	37	1.710	1.710	1.710	1.710	0.003	0.003	0.003	0.003	0.002	0.002	0.002	0.002
Shelf RKF	100-200FM	MAR-APR 2002	1	15.510	---	15.510	---	0.104	---	0.104	---	0.064	---	0.064	---
Shelf RKF	100-200FM	MAY-JUN 2002	1	8.935	---	8.935	---	0.111	---	0.111	---	0.048	---	0.048	---
Shelf RKF	100-200FM	JUL-AUG 2002	1	-	---	-	---	-	---	-	---	-	---	-	---
Slope RKF	0-100FM	SEP-OCT 2001	1	7.136	---	7.136	---	0.011	---	0.011	---	0.010	---	0.010	---
Slope RKF	0-100FM	MAY-JUN 2002	2	50.975	26.549	50.975	26.549	0.129	0.070	0.129	0.070	0.077	0.037	0.077	0.037
Slope RKF	100-200FM	SEP-OCT 2001	5	160.668	112.356	160.668	112.356	0.715	0.558	0.715	0.558	0.454	0.371	0.454	0.371
Slope RKF	100-200FM	JAN-FEB 2002	11	67.774	38.985	67.774	38.985	0.149	0.077	0.149	0.077	0.121	0.061	0.121	0.061
Slope RKF	100-200FM	MAR-APR 2002	4	28.768	24.456	28.768	24.456	0.044	0.035	0.044	0.035	0.032	0.026	0.032	0.026
Slope RKF	100-200FM	MAY-JUN 2002	13	152.796	133.602	152.796	133.602	0.259	0.228	0.259	0.228	0.223	0.196	0.223	0.196
Slope RKF	100-200FM	JUL-AUG 2002	4	0.089	0.089	0.089	0.089	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
Slope RKF	>200FM	SEP-OCT 2001	1	-	---	-	---	-	---	-	---	-	---	-	---
Flatfish	0-100FM	SEP-OCT 2001	136	0.309	0.289	0.319	0.290	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001
Flatfish	0-100FM	NOV-DEC 2001	82	0.121	0.121	0.121	0.121	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001
Flatfish	0-100FM	JAN-FEB 2002	20	-	0.191	-	0.191	-	0.001	-	0.001	-	0.001	-	0.001
Flatfish	0-100FM	MAR-APR 2002	191	0.219	0.174	0.219	0.174	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001
Flatfish	0-100FM	MAY-JUN 2002	429	0.012	0.011	0.012	0.011	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
Flatfish	0-100FM	JUL-AUG 2002	491	1.258	0.900	1.258	0.900	0.003	0.002	0.003	0.002	0.002	0.002	0.002	0.002
Flatfish	100-200FM	SEP-OCT 2001	23	5.086	2.979	5.107	2.978	0.012	0.007	0.012	0.007	0.010	0.006	0.010	0.006
Flatfish	100-200FM	NOV-DEC 2001	26	0.291	0.109	0.291	0.109	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
Flatfish	100-200FM	JAN-FEB 2002	74	10.011	6.008	10.055	6.008	0.025	0.015	0.025	0.015	0.023	0.014	0.023	0.014

Appendix Table IV.A. Continued. **NOTE: BE ESPECIALLY CAUTIOUS WHEN INTERPRETING THE ESTIMATES THAT ARE CALCULATED WITH LESS THAN 10 TOWS**

Strategy	Depth Range	Period	Number of Tows	Discarded				Bycatch				Discarded				Bycatch			
				s.e.		s.e.		s.e.		s.e.		s.e.		s.e.		s.e.		s.e.	
				lbs per hr	lbs per hr	lbs per hr	lbs per hr	lbs per hr	lbs per hr	Target	Target	Target	Target	lbs per lb of	lbs per lb of	lbs per lb of	lbs per lb of	lbs per lb of	lbs per lb of
Flatfish	100-200FM	MAR-APR 2002	33	7.177	2.574	7.181	2.574	0.028	0.011	0.028	0.011	0.028	0.011	0.020	0.008	0.020	0.008		
Flatfish	100-200FM	MAY-JUN 2002	4	64.792	48.043	65.255	48.009	0.530	0.412	0.534	0.412	0.301	0.225	0.303	0.225				
Flatfish	100-200FM	JUL-AUG 2002	21	2.206	2.206	3.958	2.450	0.001	0.001	0.002	0.001	0.001	0.001	0.001	0.001	0.002	0.001		
Flatfish	>200FM	JAN-FEB 2002	48	2.030	0.664	2.103	0.662	0.003	0.001	0.004	0.001	0.003	0.001	0.003	0.001	0.003	0.001		
Flatfish	>200FM	MAR-APR 2002	22	6.902	6.805	6.902	6.805	0.008	0.008	0.008	0.008	0.006	0.006	0.006	0.006				
Flatfish	>200FM	JUL-AUG 2002	1	-	---	-	---	-	---	-	---	-	---	-	---	-	---		
Black RKF																			
DTS	0-100FM	SEP-OCT 2001	37	-	6.528	-	6.526	-	0.018	-	0.018	-	0.014	-	0.014	-	0.014		
DTS	0-100FM	JAN-FEB 2002	1	-	---	-	---	-	---	-	---	-	---	-	---	-	---		
DTS	0-100FM	MAR-APR 2002	44	-	0.446	-	0.451	-	0.001	-	0.001	-	0.001	-	0.001	-	0.001		
DTS	0-100FM	MAY-JUN 2002	121	-	0.098	-	0.107	-	0.000	-	0.000	-	0.000	-	0.000	-	0.000		
DTS	0-100FM	JUL-AUG 2002	59	-	1.051	-	1.051	-	0.002	-	0.002	-	0.002	-	0.002	-	0.002		
DTS	100-200FM	SEP-OCT 2001	38	-	6.888	-	6.897	-	0.026	-	0.026	-	0.020	-	0.020	-	0.020		
DTS	100-200FM	JAN-FEB 2002	12	-	3.268	-	4.308	-	0.006	-	0.008	-	0.004	-	0.004	-	0.006		
DTS	100-200FM	MAR-APR 2002	39	-	6.418	-	6.428	-	0.011	-	0.011	-	0.008	-	0.008	-	0.009		
DTS	100-200FM	MAY-JUN 2002	33	-	10.330	-	10.320	-	0.028	-	0.028	-	0.022	-	0.022	-	0.022		
DTS	100-200FM	JUL-AUG 2002	26	-	14.923	-	14.908	-	0.029	-	0.029	-	0.023	-	0.023	-	0.023		
DTS	>200FM	SEP-OCT 2001	80	-	0.002	-	0.002	-	0.000	-	0.000	-	0.000	-	0.000	-	0.000		
DTS	>200FM	JAN-FEB 2002	176	-	0.268	-	0.268	-	0.001	-	0.001	-	0.001	-	0.001	-	0.001		
DTS	>200FM	MAR-APR 2002	255	-	0.103	-	0.103	-	0.000	-	0.000	-	0.000	-	0.000	-	0.000		
DTS	>200FM	MAY-JUN 2002	64	-	0.044	-	0.044	-	0.000	-	0.000	-	0.000	-	0.000	-	0.000		
DTS	>200FM	JUL-AUG 2002	14	-	0.013	-	0.041	-	0.000	-	0.000	-	0.000	-	0.000	-	0.000		
Shelf RKF	0-100FM	SEP-OCT 2001	6	-	2.899	-	5.559	-	0.012	-	0.023	-	0.009	-	0.009	-	0.016		
Shelf RKF	0-100FM	NOV-DEC 2001	54	-	0.053	-	0.053	-	0.000	-	0.000	-	0.000	-	0.000	-	0.000		
Shelf RKF	0-100FM	MAR-APR 2002	8	-	0.568	-	0.568	-	0.001	-	0.001	-	0.001	-	0.001	-	0.001		
Shelf RKF	0-100FM	MAY-JUN 2002	31	-	0.017	-	0.044	-	0.000	-	0.000	-	0.000	-	0.000	-	0.000		
Shelf RKF	0-100FM	JUL-AUG 2002	37	-	1.710	0.628	0.628	-	0.003	0.001	0.001	-	0.002	0.001	0.001	-	0.001		
Shelf RKF	100-200FM	MAR-APR 2002	1	-	---	-	---	-	---	-	---	-	---	-	---	-	---		
Shelf RKF	100-200FM	MAY-JUN 2002	1	-	---	-	---	-	---	-	---	-	---	-	---	-	---		
Shelf RKF	100-200FM	JUL-AUG 2002	1	-	---	-	---	-	---	-	---	-	---	-	---	-	---		
Slope RKF	0-100FM	SEP-OCT 2001	1	-	---	-	---	-	---	-	---	-	---	-	---	-	---		
Slope RKF	0-100FM	MAY-JUN 2002	2	-	26.549	-	26.549	-	0.070	-	0.070	-	0.037	-	0.037	-	0.037		
Slope RKF	100-200FM	SEP-OCT 2001	5	-	112.356	-	112.356	-	0.558	-	0.558	-	0.371	-	0.371	-	0.371		
Slope RKF	100-200FM	JAN-FEB 2002	11	-	38.985	-	38.985	-	0.077	-	0.077	-	0.061	-	0.061	-	0.061		
Slope RKF	100-200FM	MAR-APR 2002	4	-	24.456	-	24.456	-	0.035	-	0.035	-	0.026	-	0.026	-	0.026		
Slope RKF	100-200FM	MAY-JUN 2002	13	-	133.602	-	133.602	-	0.228	-	0.228	-	0.196	-	0.196	-	0.196		
Slope RKF	100-200FM	JUL-AUG 2002	4	-	0.089	-	0.089	-	0.000	-	0.000	-	0.000	-	0.000	-	0.000		
Slope RKF	>200FM	SEP-OCT 2001	1	-	---	-	---	-	---	-	---	-	---	-	---	-	---		
Flatfish	0-100FM	SEP-OCT 2001	136	0.100	0.078	0.575	0.278	0.000	0.000	0.003	0.001	0.000	0.000	0.002	0.001				
Flatfish	0-100FM	NOV-DEC 2001	82	2.792	0.914	2.792	0.914	0.016	0.005	0.016	0.005	0.014	0.004	0.014	0.004				

Appendix Table IV.A. Continued. **NOTE: BE ESPECIALLY CAUTIOUS WHEN INTERPRETING THE ESTIMATES THAT ARE CALCULATED WITH LESS THAN 10 TOWS**

Strategy	Depth Range	Period	Number of Tows	Discarded lbs per hr	s.e.	Bycatch lbs per hr	s.e.	Discarded Target Species	s.e.	Discarded Target Species	s.e.	Discarded lbs per lb of Groundfish	s.e.	Bycatch lbs per lb of Groundfish	s.e.
					Discarded lbs per hr		Discarded lbs per lb Target		Discarded lbs per lb Target		Bycatch lbs per lb Target				
					Discarded lbs per hr		Discarded lbs per lb Target		Discarded lbs per lb Target		Bycatch lbs per lb Target				
Flatfish	0-100FM	JAN-FEB 2002	20	-	0.191	-	0.191	-	0.001	-	0.001	-	0.001	-	0.001
Flatfish	0-100FM	MAR-APR 2002	191	-	0.174	-	0.174	-	0.001	-	0.001	-	0.001	-	0.001
Flatfish	0-100FM	MAY-JUN 2002	429	-	0.011	-	0.011	-	0.000	-	0.000	-	0.000	-	0.000
Flatfish	0-100FM	JUL-AUG 2002	491	-	0.900	-	0.900	-	0.002	-	0.002	-	0.002	-	0.002
Flatfish	100-200FM	SEP-OCT 2001	23	-	2.979	-	2.978	-	0.007	-	0.007	-	0.006	-	0.006
Flatfish	100-200FM	NOV-DEC 2001	26	-	0.109	-	0.109	-	0.000	-	0.000	-	0.000	-	0.000
Flatfish	100-200FM	JAN-FEB 2002	74	-	6.008	-	6.008	-	0.015	-	0.015	-	0.014	-	0.014
Flatfish	100-200FM	MAR-APR 2002	33	-	2.574	-	2.574	-	0.011	-	0.011	-	0.008	-	0.008
Flatfish	100-200FM	MAY-JUN 2002	4	-	48.043	-	48.009	-	0.412	-	0.412	-	0.225	-	0.225
Flatfish	100-200FM	JUL-AUG 2002	21	-	2.206	-	2.450	-	0.001	-	0.001	-	0.001	-	0.001
Flatfish	>200FM	JAN-FEB 2002	48	-	0.664	-	0.662	-	0.001	-	0.001	-	0.001	-	0.001
Flatfish	>200FM	MAR-APR 2002	22	-	6.805	-	6.805	-	0.008	-	0.008	-	0.006	-	0.006
Flatfish	>200FM	JUL-AUG 2002	1	-	---	-	---	-	---	-	---	-	---	-	---
Lingcod															
DTS	0-100FM	SEP-OCT 2001	37	9.637	2.432	13.292	2.588	0.026	0.007	0.036	0.008	0.020	0.005	0.028	0.006
DTS	0-100FM	JAN-FEB 2002	1	17.400	---	17.400	---	0.020	---	0.020	---	0.014	---	0.014	---
DTS	0-100FM	MAR-APR 2002	44	12.296	3.750	17.401	4.510	0.034	0.011	0.048	0.014	0.021	0.007	0.030	0.008
DTS	0-100FM	MAY-JUN 2002	121	19.472	7.691	26.528	9.938	0.074	0.030	0.101	0.038	0.049	0.019	0.067	0.025
DTS	0-100FM	JUL-AUG 2002	59	20.216	6.098	23.273	6.332	0.044	0.014	0.051	0.015	0.030	0.010	0.034	0.010
DTS	100-200FM	SEP-OCT 2001	38	3.548	1.536	10.930	2.583	0.013	0.006	0.041	0.010	0.010	0.004	0.031	0.008
DTS	100-200FM	JAN-FEB 2002	12	11.442	9.763	11.442	9.763	0.020	0.017	0.020	0.017	0.015	0.012	0.015	0.012
DTS	100-200FM	MAR-APR 2002	39	10.960	5.221	11.396	5.221	0.018	0.009	0.018	0.009	0.014	0.007	0.015	0.007
DTS	100-200FM	MAY-JUN 2002	33	3.627	1.399	8.017	2.152	0.010	0.004	0.022	0.006	0.008	0.003	0.017	0.005
DTS	100-200FM	JUL-AUG 2002	26	5.953	2.696	19.568	7.303	0.011	0.005	0.038	0.015	0.009	0.004	0.029	0.011
DTS	>200FM	SEP-OCT 2001	80	-	0.002	-	0.002	-	0.000	-	0.000	-	0.000	-	0.000
DTS	>200FM	JAN-FEB 2002	176	0.046	0.032	0.125	0.110	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
DTS	>200FM	MAR-APR 2002	255	0.085	0.048	0.091	0.049	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
DTS	>200FM	MAY-JUN 2002	64	-	0.044	0.062	0.062	-	0.000	0.000	0.000	-	0.000	0.000	0.000
DTS	>200FM	JUL-AUG 2002	14	-	0.013	-	0.041	-	0.000	-	0.000	-	0.000	-	0.000
Shelf RKF	0-100FM	SEP-OCT 2001	6	54.776	21.749	54.776	21.749	0.222	0.168	0.222	0.168	0.159	0.103	0.159	0.103
Shelf RKF	0-100FM	NOV-DEC 2001	54	0.751	0.341	0.751	0.341	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
Shelf RKF	0-100FM	MAR-APR 2002	8	3.494	1.809	3.494	1.809	0.007	0.004	0.007	0.004	0.006	0.003	0.006	0.003
Shelf RKF	0-100FM	MAY-JUN 2002	31	4.157	1.333	4.157	1.333	0.006	0.002	0.006	0.002	0.005	0.002	0.005	0.002
Shelf RKF	0-100FM	JUL-AUG 2002	37	38.592	12.205	38.592	12.205	0.065	0.041	0.065	0.041	0.047	0.024	0.047	0.024
Shelf RKF	100-200FM	MAR-APR 2002	1	-	---	-	---	-	---	-	---	-	---	-	---
Shelf RKF	100-200FM	MAY-JUN 2002	1	7.548	---	7.548	---	0.094	---	0.094	---	0.040	---	0.040	---
Shelf RKF	100-200FM	JUL-AUG 2002	1	-	---	-	---	-	---	-	---	-	---	-	---
Slope RKF	0-100FM	SEP-OCT 2001	1	50.601	---	50.601	---	0.076	---	0.076	---	0.069	---	0.069	---
Slope RKF	0-100FM	MAY-JUN 2002	2	105.563	57.905	120.588	67.882	0.267	0.152	0.305	0.177	0.159	0.082	0.181	0.097
Slope RKF	100-200FM	SEP-OCT 2001	5	0.333	0.333	4.293	4.293	0.001	0.001	0.019	0.019	0.001	0.001	0.012	0.012

Appendix Table IV.A. Continued. **NOTE: BE ESPECIALLY CAUTIOUS WHEN INTERPRETING THE ESTIMATES THAT ARE CALCULATED WITH LESS THAN 10 TOWS**

Strategy	Depth Range	Period	Number of Tows	Discarded lbs per hr	s.e.	Bycatch lbs per hr	s.e.	Discarded Target Species	s.e.	Bycatch Target Species	s.e.	Discarded lbs per lb of Groundfish	s.e.	Bycatch lbs per lb of Groundfish	s.e.
					Discarded lbs per hr		Bycatch lbs per hr		Discarded lbs per lb of Groundfish		Bycatch lbs per lb of Groundfish				
Slope RKF	100-200FM	JAN-FEB 2002	11	12.707	9.236	12.707	9.236	0.028	0.019	0.028	0.019	0.023	0.016	0.023	0.016
Slope RKF	100-200FM	MAR-APR 2002	4	2.755	2.755	2.755	2.755	0.004	0.004	0.004	0.004	0.003	0.003	0.003	0.003
Slope RKF	100-200FM	MAY-JUN 2002	13	5.926	2.880	7.890	3.212	0.010	0.005	0.013	0.006	0.009	0.004	0.012	0.005
Slope RKF	100-200FM	JUL-AUG 2002	4	-	0.089	5.925	5.925	-	0.000	0.007	0.007	-	0.000	0.006	0.006
Slope RKF	>200FM	SEP-OCT 2001	1	-	---	-	---	-	---	-	---	-	---	-	---
Flatfish	0-100FM	SEP-OCT 2001	136	9.049	1.621	11.468	1.750	0.042	0.008	0.054	0.009	0.036	0.007	0.045	0.008
Flatfish	0-100FM	NOV-DEC 2001	82	12.367	4.130	13.201	4.293	0.070	0.023	0.074	0.024	0.061	0.020	0.065	0.021
Flatfish	0-100FM	JAN-FEB 2002	20	14.704	5.262	15.939	5.167	0.074	0.049	0.080	0.052	0.055	0.029	0.059	0.031
Flatfish	0-100FM	MAR-APR 2002	191	7.946	2.435	11.281	2.544	0.036	0.011	0.051	0.012	0.029	0.009	0.042	0.010
Flatfish	0-100FM	MAY-JUN 2002	429	10.264	1.034	15.694	1.368	0.026	0.003	0.039	0.005	0.018	0.002	0.027	0.003
Flatfish	0-100FM	JUL-AUG 2002	491	36.625	7.220	41.221	7.927	0.079	0.018	0.089	0.019	0.062	0.013	0.070	0.015
Flatfish	100-200FM	SEP-OCT 2001	23	1.226	0.946	1.760	1.103	0.003	0.002	0.004	0.003	0.002	0.002	0.003	0.002
Flatfish	100-200FM	NOV-DEC 2001	26	2.648	1.556	3.074	1.968	0.004	0.002	0.005	0.003	0.004	0.002	0.005	0.003
Flatfish	100-200FM	JAN-FEB 2002	74	2.031	0.509	2.093	0.511	0.005	0.001	0.005	0.001	0.005	0.001	0.005	0.001
Flatfish	100-200FM	MAR-APR 2002	33	8.778	2.829	13.782	3.457	0.034	0.012	0.054	0.016	0.024	0.009	0.038	0.012
Flatfish	100-200FM	MAY-JUN 2002	4	12.138	11.033	23.081	13.882	0.099	0.091	0.189	0.125	0.056	0.051	0.107	0.065
Flatfish	100-200FM	JUL-AUG 2002	21	5.722	4.042	7.504	5.238	0.003	0.002	0.004	0.003	0.002	0.002	0.003	0.002
Flatfish	>200FM	JAN-FEB 2002	48	2.194	0.899	2.528	1.186	0.004	0.002	0.004	0.002	0.003	0.001	0.004	0.002
Flatfish	>200FM	MAR-APR 2002	22	-	6.805	0.228	0.158	-	0.008	0.000	0.000	-	0.006	0.000	0.000
Flatfish	>200FM	JUL-AUG 2002	1	-	---	-	---	-	---	-	---	-	---	-	---
Pacific Halibut															
DTS	0-100FM	SEP-OCT 2001	37	0.445	0.445	0.445	0.445	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001
DTS	0-100FM	JAN-FEB 2002	1	-	---	-	---	-	---	-	---	-	---	-	---
DTS	0-100FM	MAR-APR 2002	44	6.359	3.685	6.359	3.685	0.018	0.010	0.018	0.010	0.011	0.006	0.011	0.006
DTS	0-100FM	MAY-JUN 2002	121	9.070	4.689	9.070	4.689	0.035	0.018	0.035	0.018	0.023	0.012	0.023	0.012
DTS	0-100FM	JUL-AUG 2002	59	3.845	2.217	3.845	2.217	0.008	0.005	0.008	0.005	0.006	0.003	0.006	0.003
DTS	100-200FM	SEP-OCT 2001	38	1.086	0.830	1.086	0.830	0.004	0.003	0.004	0.003	0.003	0.002	0.003	0.002
DTS	100-200FM	JAN-FEB 2002	12	0.197	0.197	0.197	0.197	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
DTS	100-200FM	MAR-APR 2002	39	7.682	5.860	7.682	5.860	0.012	0.009	0.012	0.009	0.010	0.008	0.010	0.008
DTS	100-200FM	MAY-JUN 2002	33	-	1.399	-	2.152	-	0.004	-	0.006	-	0.003	-	0.005
DTS	100-200FM	JUL-AUG 2002	26	4.107	1.830	4.107	1.830	0.008	0.004	0.008	0.004	0.006	0.003	0.006	0.003
DTS	>200FM	SEP-OCT 2001	80	-	0.002	-	0.002	-	0.000	-	0.000	-	0.000	-	0.000
DTS	>200FM	JAN-FEB 2002	176	0.989	0.464	0.989	0.464	0.003	0.001	0.003	0.001	0.003	0.001	0.003	0.001
DTS	>200FM	MAR-APR 2002	255	0.498	0.171	0.498	0.171	0.002	0.001	0.002	0.001	0.002	0.001	0.002	0.001
DTS	>200FM	MAY-JUN 2002	64	0.114	0.114	0.114	0.114	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
DTS	>200FM	JUL-AUG 2002	14	-	0.013	-	0.041	-	0.000	-	0.000	-	0.000	-	0.000
Shelf RKF	0-100FM	SEP-OCT 2001	6	-	21.749	-	21.749	-	0.168	-	0.168	-	0.103	-	0.103
Shelf RKF	0-100FM	NOV-DEC 2001	54	0.174	0.174	0.174	0.174	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
Shelf RKF	0-100FM	MAR-APR 2002	8	6.115	6.115	6.115	6.115	0.012	0.012	0.012	0.012	0.010	0.010	0.010	0.010
Shelf RKF	0-100FM	MAY-JUN 2002	31	6.933	6.048	6.933	6.048	0.011	0.009	0.011	0.009	0.009	0.008	0.009	0.008

Appendix Table IV.A. Continued. **NOTE: BE ESPECIALLY CAUTIOUS WHEN INTERPRETING THE ESTIMATES THAT ARE CALCULATED WITH LESS THAN 10 TOWS**

Strategy	Depth Range	Period	Number of Tows	Discarded lbs per hr	s.e.	Bycatch lbs per hr	s.e.	Discarded Target Species	s.e.	Bycatch Target Species	s.e.	Discarded Groundfish	s.e.	Bycatch Groundfish	s.e.
					Discarded lbs per hr		Bycatch lbs per hr		Discarded lbs per lb of lbs per						

Appendix Table IV.A. Continued. **NOTE: BE ESPECIALLY CAUTIOUS WHEN INTERPRETING THE ESTIMATES THAT ARE CALCULATED WITH LESS THAN 10 TOWS**

Strategy	Depth Range	Period	Number of Tows	Discarded lbs per hr	s.e.	Bycatch lbs per hr	s.e.	Discarded Target Species	s.e.	Discarded Target Species	s.e.	Bycatch Target Species	s.e.	Discarded lbs per lb of Groundfish	s.e.	Bycatch lbs per lb of Groundfish	s.e.
					Appendix T ₁		Appendix T ₁		Appendix T ₁		Appendix T ₁		Appendix T ₁		Appendix T ₁		Appendix T ₁
DTS	100-200FM	SEP-OCT 2001	38	43.286	17.487	89.661	28.634	0.161	0.066	0.334	0.110	0.125	0.051	0.258	0.084		
DTS	100-200FM	JAN-FEB 2002	12	179.837	64.279	191.893	63.161	0.320	0.120	0.342	0.120	0.229	0.085	0.244	0.084		
DTS	100-200FM	MAR-APR 2002	39	92.633	17.173	111.205	16.778	0.149	0.034	0.179	0.036	0.120	0.027	0.144	0.028		
DTS	100-200FM	MAY-JUN 2002	33	75.950	14.763	102.943	21.473	0.204	0.046	0.276	0.066	0.159	0.035	0.216	0.050		
DTS	100-200FM	JUL-AUG 2002	26	137.682	36.204	173.087	37.527	0.265	0.075	0.333	0.080	0.207	0.057	0.260	0.061		
DTS	>200FM	SEP-OCT 2001	80	4.910	0.756	6.287	0.910	0.029	0.005	0.037	0.006	0.028	0.005	0.036	0.006		
DTS	>200FM	JAN-FEB 2002	176	18.428	3.041	20.940	3.083	0.057	0.010	0.065	0.010	0.052	0.009	0.059	0.009		
DTS	>200FM	MAR-APR 2002	255	14.769	2.486	16.981	2.556	0.051	0.009	0.059	0.009	0.048	0.008	0.055	0.009		
DTS	>200FM	MAY-JUN 2002	64	27.038	10.204	28.371	10.196	0.110	0.043	0.115	0.043	0.106	0.042	0.112	0.042		
DTS	>200FM	JUL-AUG 2002	14	10.563	3.291	18.231	8.585	0.043	0.014	0.074	0.035	0.040	0.013	0.070	0.033		
Shelf RKF	0-100FM	SEP-OCT 2001	6	42.654	10.330	43.544	10.063	0.173	0.125	0.176	0.127	0.124	0.074	0.126	0.075		
Shelf RKF	0-100FM	NOV-DEC 2001	54	21.057	8.091	21.122	8.090	0.010	0.004	0.010	0.004	0.010	0.004	0.010	0.004		
Shelf RKF	0-100FM	MAR-APR 2002	8	142.409	92.638	339.112	175.158	0.276	0.187	0.657	0.366	0.234	0.155	0.556	0.300		
Shelf RKF	0-100FM	MAY-JUN 2002	31	29.759	19.389	37.789	20.834	0.046	0.031	0.058	0.034	0.038	0.025	0.048	0.028		
Shelf RKF	0-100FM	JUL-AUG 2002	37	98.416	38.831	98.416	38.831	0.166	0.110	0.166	0.110	0.121	0.066	0.121	0.066		
Shelf RKF	100-200FM	MAR-APR 2002	1	6.032	---	25.982	---	0.041	---	0.175	---	0.025	---	0.108	---		
Shelf RKF	100-200FM	MAY-JUN 2002	1	15.713	---	38.238	---	0.195	---	0.475	---	0.084	---	0.204	---		
Shelf RKF	100-200FM	JUL-AUG 2002	1	346.385	---	346.385	---	2.425	---	2.425	---	1.341	---	1.341	---		
Slope RKF	0-100FM	SEP-OCT 2001	1	-	---	20.084	---	-	---	0.030	---	-	---	0.027	---		
Slope RKF	0-100FM	MAY-JUN 2002	2	33.900	20.068	33.900	20.068	0.086	0.052	0.086	0.052	0.051	0.029	0.051	0.029		
Slope RKF	100-200FM	SEP-OCT 2001	5	32.110	24.951	32.110	24.951	0.143	0.119	0.143	0.119	0.091	0.078	0.091	0.078		
Slope RKF	100-200FM	JAN-FEB 2002	11	41.330	17.481	87.025	46.735	0.091	0.028	0.191	0.089	0.074	0.021	0.155	0.070		
Slope RKF	100-200FM	MAR-APR 2002	4	723.069	696.827	763.146	697.760	1.097	1.044	1.158	1.024	0.808	0.770	0.853	0.757		
Slope RKF	100-200FM	MAY-JUN 2002	13	67.767	31.118	76.667	30.532	0.115	0.057	0.130	0.058	0.099	0.049	0.112	0.049		
Slope RKF	100-200FM	JUL-AUG 2002	4	170.789	78.040	170.789	78.040	0.208	0.122	0.208	0.122	0.168	0.094	0.168	0.094		
Slope RKF	>200FM	SEP-OCT 2001	1	37.138	---	37.138	---	0.137	---	0.137	---	0.073	---	0.073	---		
Flatfish	0-100FM	SEP-OCT 2001	136	65.496	11.094	172.826	27.362	0.307	0.056	0.811	0.139	0.259	0.048	0.685	0.119		
Flatfish	0-100FM	NOV-DEC 2001	82	96.283	24.305	178.256	26.673	0.542	0.137	1.003	0.151	0.475	0.119	0.880	0.130		
Flatfish	0-100FM	JAN-FEB 2002	20	181.457	71.133	526.094	242.711	0.912	0.610	2.644	1.844	0.676	0.374	1.959	1.168		
Flatfish	0-100FM	MAR-APR 2002	191	156.682	15.852	322.678	46.962	0.705	0.085	1.453	0.232	0.581	0.066	1.196	0.185		
Flatfish	0-100FM	MAY-JUN 2002	429	148.031	15.251	209.901	17.558	0.371	0.048	0.526	0.061	0.254	0.031	0.360	0.039		
Flatfish	0-100FM	JUL-AUG 2002	491	126.025	11.646	166.809	12.786	0.273	0.037	0.362	0.046	0.215	0.027	0.284	0.032		
Flatfish	100-200FM	SEP-OCT 2001	23	34.517	8.563	52.793	11.114	0.081	0.025	0.124	0.035	0.065	0.019	0.100	0.026		
Flatfish	100-200FM	NOV-DEC 2001	26	46.699	19.843	59.752	21.029	0.073	0.032	0.094	0.034	0.071	0.031	0.091	0.033		
Flatfish	100-200FM	JAN-FEB 2002	74	56.415	12.039	74.886	13.651	0.141	0.032	0.188	0.036	0.127	0.028	0.169	0.032		
Flatfish	100-200FM	MAR-APR 2002	33	65.518	17.767	131.725	20.411	0.255	0.081	0.513	0.118	0.182	0.058	0.365	0.085		
Flatfish	100-200FM	MAY-JUN 2002	4	158.950	103.515	161.679	102.587	1.301	0.912	1.324	0.910	0.738	0.486	0.751	0.483		
Flatfish	100-200FM	JUL-AUG 2002	21	396.945	119.291	407.641	123.492	0.206	0.067	0.211	0.069	0.157	0.050	0.162	0.052		
Flatfish	>200FM	JAN-FEB 2002	48	45.223	17.873	72.225	18.517	0.078	0.034	0.124	0.039	0.069	0.029	0.110	0.034		
Flatfish	>200FM	MAR-APR 2002	22	84.929	32.388	87.876	32.243	0.096	0.044	0.099	0.044	0.079	0.034	0.081	0.034		
Flatfish	>200FM	JUL-AUG 2002	1	88.278	---	88.278	---	0.127	---	0.127	---	0.092	---	0.092	---		

Appendix Table IV.

B) Ratio estimators and the standard errors (s.e.) for the discarded and bycatch pounds of the 23 selected species or categories per hour of tow, per pound of retained target species, per pound of retained groundfish by depth range, target strategy in the area south of 40°10'N, and period. Bycatch is defined as discarded plus retained pounds of a species, which does not belong to the assigned tow strategy. 0.000: 0 < estimate < 0.0004, -: estimate = 0, ---: s.e. is not estimable due to number of tows = 1.

NOTE: BE ESPECIALLY CAUTIOUS WHEN INTERPRETING THE ESTIMATES THAT ARE CALCULATED WITH LESS THAN 10 TOW!

Strategy	Depth Range	Period	Number of Tows	Discarded lbs per hr	s.e.	Bycatch lbs per hr	s.e.	Discarded lbs per lb Target Species	s.e.	Bycatch lbs per lb Target Species	s.e.	Discarded lbs per lb of Groundfish	s.e.	Bycatch lbs per lb of Groundfish	s.e.
					Discarded lbs per hr		Bycatch lbs per hr		Discarded lbs per lb Target Species		Bycatch lbs per lb Target Species		Discarded lbs per lb of Groundfish		Bycatch lbs per lb of Groundfish
South of 40°10'															
Pacific Whiting															
DTS	0-100FM	MAR-APR 2002	2	6.556	1.952	6.556	1.952	0.014	0.014	0.014	0.014	0.013	0.011	0.013	0.011
DTS	0-100FM	MAY-JUN 2002	3	90.245	39.419	90.245	39.419	0.231	0.126	0.231	0.126	0.150	0.073	0.150	0.073
DTS	100-200FM	SEP-OCT 2001	1	1,755.356	---	1,755.356	---	11.759	---	11.759	---	5.505	---	5.505	---
DTS	100-200FM	MAR-APR 2002	4	93.731	57.892	93.731	57.892	0.148	0.110	0.148	0.110	0.138	0.103	0.138	0.103
DTS	100-200FM	MAY-JUN 2002	7	35.768	23.332	35.768	23.332	0.137	0.113	0.137	0.113	0.115	0.090	0.115	0.090
DTS	100-200FM	JUL-AUG 2002	8	10.257	3.518	10.257	3.518	0.028	0.010	0.028	0.010	0.023	0.008	0.023	0.008
DTS	>200FM	SEP-OCT 2001	4	77.705	57.316	77.705	57.316	0.071	0.053	0.071	0.053	0.068	0.051	0.068	0.051
DTS	>200FM	JAN-FEB 2002	46	3.721	2.042	3.721	2.042	0.013	0.007	0.013	0.007	0.013	0.007	0.013	0.007
DTS	>200FM	MAR-APR 2002	59	15.298	4.254	15.298	4.254	0.035	0.010	0.035	0.010	0.032	0.010	0.032	0.010
DTS	>200FM	MAY-JUN 2002	37	11.511	9.825	11.511	9.825	0.026	0.022	0.026	0.022	0.026	0.022	0.026	0.022
DTS	>200FM	JUL-AUG 2002	156	4.841	1.073	4.841	1.073	0.014	0.003	0.014	0.003	0.014	0.003	0.014	0.003
Shelf RKF	0-100FM	SEP-OCT 2001	4	20.868	10.645	20.868	10.645	0.241	0.137	0.241	0.137	0.161	0.095	0.161	0.095
Shelf RKF	0-100FM	NOV-DEC 2001	1	-	---	-	---	-	---	-	---	-	---	-	---
Shelf RKF	0-100FM	JAN-FEB 2002	3	-	---	-	---	-	---	-	---	-	---	-	---
Shelf RKF	0-100FM	MAR-APR 2002	8	42.329	15.609	42.329	15.609	0.104	0.047	0.104	0.047	0.079	0.034	0.079	0.034
Shelf RKF	0-100FM	MAY-JUN 2002	6	1,955.084	848.284	1,955.084	848.284	1.246	0.592	1.246	0.592	1.078	0.480	1.078	0.480
Shelf RKF	100-200FM	SEP-OCT 2001	5	14.083	3.561	14.083	3.561	0.084	0.046	0.084	0.046	0.059	0.029	0.059	0.029
Shelf RKF	100-200FM	JAN-FEB 2002	5	38.051	11.847	38.051	11.847	0.081	0.028	0.081	0.028	0.065	0.024	0.065	0.024
Shelf RKF	100-200FM	MAR-APR 2002	2	84.575	61.689	84.575	61.689	0.507	0.439	0.507	0.439	0.423	0.360	0.423	0.360
Shelf RKF	100-200FM	MAY-JUN 2002	2	342.990	220.012	349.656	219.092	1.086	0.507	1.107	0.486	0.701	0.330	0.715	0.317
Slope RKF	100-200FM	SEP-OCT 2001	1	-	---	-	---	-	---	-	---	-	---	-	---
Slope RKF	100-200FM	NOV-DEC 2001	5	181.246	48.469	181.246	48.469	0.469	0.133	0.469	0.133	0.364	0.098	0.364	0.098
Slope RKF	100-200FM	JAN-FEB 2002	18	48.266	12.779	48.266	12.779	0.156	0.060	0.156	0.060	0.131	0.046	0.131	0.046
Slope RKF	100-200FM	MAR-APR 2002	11	77.893	23.005	77.893	23.005	0.042	0.023	0.042	0.023	0.042	0.023	0.042	0.023
Slope RKF	100-200FM	MAY-JUN 2002	8	53.706	32.843	53.706	32.843	0.024	0.018	0.024	0.018	0.024	0.018	0.024	0.018
Slope RKF	100-200FM	JUL-AUG 2002	3	32.827	32.827	32.827	32.827	0.016	0.016	0.016	0.016	0.016	0.016	0.016	0.016
Slope RKF	>200FM	MAY-JUN 2002	10	101.596	75.452	101.596	75.452	0.054	0.043	0.054	0.043	0.054	0.043	0.054	0.043
Slope RKF	>200FM	JUL-AUG 2002	1	15.293	---	15.293	---	0.103	---	0.103	---	0.096	---	0.096	---
Flatfish	0-100FM	SEP-OCT 2001	127	7.453	3.100	7.453	3.100	0.048	0.020	0.048	0.020	0.044	0.019	0.044	0.019
Flatfish	0-100FM	NOV-DEC 2001	35	10.355	4.046	10.355	4.046	0.088	0.040	0.088	0.040	0.080	0.036	0.080	0.036
Flatfish	0-100FM	JAN-FEB 2002	53	0.719	0.339	0.719	0.339	0.002	0.001	0.002	0.001	0.002	0.001	0.002	0.001
Flatfish	0-100FM	MAR-APR 2002	37	10.706	5.690	10.706	5.690	0.035	0.020	0.035	0.020	0.035	0.020	0.035	0.020
Flatfish	0-100FM	MAY-JUN 2002	7	24.233	12.993	24.233	12.993	0.316	0.182	0.316	0.182	0.209	0.127	0.209	0.127
Flatfish	100-200FM	SEP-OCT 2001	34	16.535	3.866	17.044	3.811	0.050	0.012	0.052	0.012	0.048	0.012	0.050	0.012
Flatfish	100-200FM	NOV-DEC 2001	6	86.538	24.681	86.538	24.681	0.256	0.121	0.256	0.121	0.226	0.094	0.226	0.094
Flatfish	100-200FM	JAN-FEB 2002	5	41.691	13.472	41.691	13.472	0.137	0.060	0.137	0.060	0.125	0.053	0.125	0.053

Appendix Table IV.B. Continued. **NOTE: BE ESPECIALLY CAUTIOUS WHEN INTERPRETING THE ESTIMATES THAT ARE CALCULATED WITH LESS THAN 10 TOWS**

Strategy	Depth Range	Period	Number of Tows	Discarded lbs per hr	s.e.	Bycatch lbs per hr	s.e.	Discarded lbs per lb Target Species	s.e.	Discarded lbs per lb Target Species	s.e.	Discarded lbs per lb of Groundfish	s.e.	Bycatch lbs per lb of Groundfish	s.e.
					lbs per hr		lbs per hr	lbs per hr	lbs per hr	lbs per lb	lbs per lb	lbs per lb	lbs per lb	lbs per lb	lbs per lb
Flatfish	100-200FM	MAR-APR 2002	1	60.335	---	60.335	---	0.160	---	0.160	---	0.148	---	0.148	---
Flatfish	100-200FM	JUL-AUG 2002	3	25.764	16.226	25.764	16.226	0.179	0.119	0.179	0.119	0.164	0.109	0.164	0.109
Flatfish	>200FM	SEP-OCT 2001	4	50.798	14.273	50.798	14.273	0.663	0.187	0.663	0.187	0.449	0.130	0.449	0.130
Arrowtooth flounder															
DTS	0-100FM	MAR-APR 2002	2	-	1.952	-	1.952	-	0.014	-	0.014	-	0.011	-	0.011
DTS	0-100FM	MAY-JUN 2002	3	7.920	4.600	7.920	4.600	0.020	0.013	0.020	0.013	0.013	0.008	0.013	0.008
DTS	100-200FM	SEP-OCT 2001	1	-	---	-	---	-	---	-	---	-	---	-	---
DTS	100-200FM	MAR-APR 2002	4	1.234	1.234	1.234	1.234	0.002	0.002	0.002	0.002	0.002	0.002	0.002	0.002
DTS	100-200FM	MAY-JUN 2002	7	3.060	1.974	3.060	1.974	0.012	0.010	0.012	0.010	0.010	0.008	0.010	0.008
DTS	100-200FM	JUL-AUG 2002	8	2.967	2.099	2.967	2.099	0.008	0.006	0.008	0.006	0.007	0.005	0.007	0.005
DTS	>200FM	SEP-OCT 2001	4	-	57.316	-	57.316	-	0.053	-	0.053	-	0.051	-	0.051
DTS	>200FM	JAN-FEB 2002	46	-	2.042	-	2.042	-	0.007	-	0.007	-	0.007	-	0.007
DTS	>200FM	MAR-APR 2002	59	0.245	0.202	0.245	0.202	0.001	0.000	0.001	0.000	0.001	0.000	0.001	0.000
DTS	>200FM	MAY-JUN 2002	37	0.005	0.005	0.005	0.005	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
DTS	>200FM	JUL-AUG 2002	156	0.196	0.063	0.505	0.198	0.001	0.000	0.001	0.001	0.001	0.000	0.001	0.001
Shelf RKF	0-100FM	SEP-OCT 2001	4	-	10.645	-	10.645	-	0.137	-	0.137	-	0.095	-	0.095
Shelf RKF	0-100FM	NOV-DEC 2001	1	-	---	-	---	-	---	-	---	-	---	-	---
Shelf RKF	0-100FM	JAN-FEB 2002	3	-	---	-	---	-	---	-	---	-	---	-	---
Shelf RKF	0-100FM	MAR-APR 2002	8	2.449	1.034	2.449	1.034	0.006	0.003	0.006	0.003	0.005	0.002	0.005	0.002
Shelf RKF	0-100FM	MAY-JUN 2002	6	0.401	0.401	0.401	0.401	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
Shelf RKF	100-200FM	SEP-OCT 2001	5	-	3.561	-	3.561	-	0.046	-	0.046	-	0.029	-	0.029
Shelf RKF	100-200FM	JAN-FEB 2002	5	3.564	2.849	3.564	2.849	0.008	0.006	0.008	0.006	0.006	0.005	0.006	0.005
Shelf RKF	100-200FM	MAR-APR 2002	2	7.769	7.769	7.769	7.769	0.047	0.047	0.047	0.047	0.039	0.039	0.039	0.039
Shelf RKF	100-200FM	MAY-JUN 2002	2	6.316	6.316	6.316	6.316	0.020	0.020	0.020	0.020	0.013	0.013	0.013	0.013
Slope RKF	100-200FM	SEP-OCT 2001	1	-	---	-	---	-	---	-	---	-	---	-	---
Slope RKF	100-200FM	NOV-DEC 2001	5	-	48.469	-	48.469	-	0.133	-	0.133	-	0.098	-	0.098
Slope RKF	100-200FM	JAN-FEB 2002	18	0.008	0.008	0.008	0.008	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
Slope RKF	100-200FM	MAR-APR 2002	11	0.306	0.306	0.306	0.306	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
Slope RKF	100-200FM	MAY-JUN 2002	8	0.032	0.032	0.355	0.355	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
Slope RKF	100-200FM	JUL-AUG 2002	3	-	32.827	-	32.827	-	0.016	-	0.016	-	0.016	-	0.016
Slope RKF	>200FM	MAY-JUN 2002	10	-	75.452	-	75.452	-	0.043	-	0.043	-	0.043	-	0.043
Slope RKF	>200FM	JUL-AUG 2002	1	-	---	-	---	-	---	-	---	-	---	-	---
Flatfish	0-100FM	SEP-OCT 2001	127	0.510	0.380	0.510	0.380	0.003	0.002	0.003	0.002	0.003	0.002	0.003	0.002
Flatfish	0-100FM	NOV-DEC 2001	35	-	4.046	-	4.046	-	0.040	-	0.040	-	0.036	-	0.036
Flatfish	0-100FM	JAN-FEB 2002	53	0.211	0.211	0.211	0.211	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
Flatfish	0-100FM	MAR-APR 2002	37	-	5.690	-	5.690	-	0.020	-	0.020	-	0.020	-	0.020
Flatfish	0-100FM	MAY-JUN 2002	7	1.199	1.069	1.199	1.069	0.016	0.014	0.016	0.014	0.010	0.009	0.010	0.009
Flatfish	100-200FM	SEP-OCT 2001	34	0.973	0.973	0.973	0.973	0.003	0.003	0.003	0.003	0.003	0.003	0.003	0.003
Flatfish	100-200FM	NOV-DEC 2001	6	0.156	0.156	0.156	0.156	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
Flatfish	100-200FM	JAN-FEB 2002	5	13.215	6.929	13.215	6.929	0.044	0.026	0.044	0.026	0.040	0.023	0.040	0.023

Appendix Table IV.B. Continued. **NOTE: BE ESPECIALLY CAUTIOUS WHEN INTERPRETING THE ESTIMATES THAT ARE CALCULATED WITH LESS THAN 10 TOWS**

Strategy	Depth Range	Period	Number of Tows	Discarded lbs per hr	s.e.	Bycatch lbs per hr	s.e.	Discarded lbs per lb Target Species	s.e.	Bycatch lbs per lb Target Species	s.e.	Discarded lbs per lb of Groundfish	s.e.	Bycatch lbs per lb of Groundfish	s.e.
					Discarded lbs per hr		Bycatch lbs per hr		Discarded lbs per lb Target		Bycatch lbs per lb Target		Discarded lbs per lb of Groundfish		Bycatch lbs per lb of Groundfish
Flatfish	100-200FM	MAR-APR 2002	1	23.448	---	23.448	---	0.062	---	0.062	---	0.057	---	0.057	---
Flatfish	100-200FM	JUL-AUG 2002	3	3.144	1.508	3.144	1.508	0.022	0.012	0.022	0.012	0.020	0.011	0.020	0.011
Flatfish	>200FM	SEP-OCT 2001	4	-	14.273	-	14.273	-	0.187	-	0.187	-	0.130	-	0.130
Petrale sole															
DTS	0-100FM	MAR-APR 2002	2	0.125	0.125	6.631	6.631	0.000	0.000	0.014	0.014	0.000	0.000	0.013	0.013
DTS	0-100FM	MAY-JUN 2002	3	-	4.600	22.958	12.409	-	0.013	0.059	0.036	-	0.008	0.038	0.022
DTS	100-200FM	SEP-OCT 2001	1	-	---	9.568	---	-	---	0.064	---	-	---	0.030	---
DTS	100-200FM	MAR-APR 2002	4	0.110	0.110	4.841	4.714	0.000	0.000	0.008	0.007	0.000	0.000	0.007	0.007
DTS	100-200FM	MAY-JUN 2002	7	0.013	0.013	3.242	2.112	0.000	0.000	0.012	0.010	0.000	0.000	0.010	0.008
DTS	100-200FM	JUL-AUG 2002	8	-	2.099	-	2.099	-	0.006	-	0.006	-	0.005	-	0.005
DTS	>200FM	SEP-OCT 2001	4	-	57.316	-	57.316	-	0.053	-	0.053	-	0.051	-	0.051
DTS	>200FM	JAN-FEB 2002	46	-	2.042	0.004	0.004	-	0.007	0.000	0.000	-	0.007	0.000	0.000
DTS	>200FM	MAR-APR 2002	59	-	0.202	0.430	0.171	-	0.000	0.001	0.000	-	0.000	0.001	0.000
DTS	>200FM	MAY-JUN 2002	37	-	0.005	0.063	0.063	-	0.000	0.000	0.000	-	0.000	0.000	0.000
DTS	>200FM	JUL-AUG 2002	156	0.014	0.010	0.018	0.011	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
Shelf RKF	0-100FM	SEP-OCT 2001	4	0.189	0.189	20.718	15.416	0.002	0.002	0.239	0.184	0.001	0.001	0.160	0.125
Shelf RKF	0-100FM	NOV-DEC 2001	1	-	---	350.487	---	-	---	0.700	---	-	---	0.394	---
Shelf RKF	0-100FM	JAN-FEB 2002	3	4.578	4.578	54.789	28.811	0.008	0.008	0.091	0.050	0.005	0.005	0.058	0.032
Shelf RKF	0-100FM	MAR-APR 2002	8	1.173	1.120	12.715	2.007	0.003	0.003	0.031	0.010	0.002	0.002	0.024	0.007
Shelf RKF	0-100FM	MAY-JUN 2002	6	0.189	0.189	36.039	22.746	0.000	0.000	0.023	0.015	0.000	0.000	0.020	0.013
Shelf RKF	100-200FM	SEP-OCT 2001	5	0.166	0.136	40.705	16.876	0.001	0.001	0.242	0.150	0.001	0.001	0.171	0.098
Shelf RKF	100-200FM	JAN-FEB 2002	5	0.478	0.478	13.980	7.845	0.001	0.001	0.030	0.017	0.001	0.001	0.024	0.014
Shelf RKF	100-200FM	MAR-APR 2002	2	2.590	2.590	16.467	16.467	0.016	0.016	0.099	0.099	0.013	0.013	0.082	0.082
Shelf RKF	100-200FM	MAY-JUN 2002	2	1.421	1.421	51.421	51.421	0.004	0.004	0.163	0.163	0.003	0.003	0.105	0.105
Slope RKF	100-200FM	SEP-OCT 2001	1	-	---	130.909	---	-	---	0.545	---	-	---	0.352	---
Slope RKF	100-200FM	NOV-DEC 2001	5	-	48.469	79.292	12.583	-	0.133	0.205	0.038	-	0.098	0.159	0.026
Slope RKF	100-200FM	JAN-FEB 2002	18	0.653	0.439	39.681	9.702	0.002	0.001	0.128	0.047	0.002	0.001	0.108	0.036
Slope RKF	100-200FM	MAR-APR 2002	11	0.871	0.414	0.871	0.414	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
Slope RKF	100-200FM	MAY-JUN 2002	8	-	0.032	0.215	0.215	-	0.000	0.000	0.000	-	0.000	0.000	0.000
Slope RKF	100-200FM	JUL-AUG 2002	3	0.725	0.725	3.832	2.923	0.000	0.000	0.002	0.002	0.000	0.000	0.002	0.002
Slope RKF	>200FM	MAY-JUN 2002	10	-	75.452	0.083	0.083	-	0.043	0.000	0.000	-	0.043	0.000	0.000
Slope RKF	>200FM	JUL-AUG 2002	1	-	---	-	---	-	---	-	---	-	---	-	---
Flatfish	0-100FM	SEP-OCT 2001	127	1.914	1.442	1.914	1.442	0.012	0.009	0.012	0.009	0.011	0.009	0.011	0.009
Flatfish	0-100FM	NOV-DEC 2001	35	1.506	0.544	1.506	0.544	0.013	0.005	0.013	0.005	0.012	0.005	0.012	0.005
Flatfish	0-100FM	JAN-FEB 2002	53	1.618	1.452	1.618	1.452	0.003	0.003	0.003	0.003	0.003	0.003	0.003	0.003
Flatfish	0-100FM	MAR-APR 2002	37	0.178	0.103	0.178	0.103	0.001	0.000	0.001	0.000	0.001	0.000	0.001	0.000
Flatfish	0-100FM	MAY-JUN 2002	7	0.482	0.333	0.482	0.333	0.006	0.004	0.006	0.004	0.004	0.003	0.004	0.003
Flatfish	100-200FM	SEP-OCT 2001	34	-	0.973	-	0.973	-	0.003	-	0.003	-	0.003	-	0.003
Flatfish	100-200FM	NOV-DEC 2001	6	1.014	1.014	1.014	1.014	0.003	0.003	0.003	0.003	0.003	0.003	0.003	0.003
Flatfish	100-200FM	JAN-FEB 2002	5	-	6.929	-	6.929	-	0.026	-	0.026	-	0.023	-	0.023

Appendix Table IV.B. Continued. **NOTE: BE ESPECIALLY CAUTIOUS WHEN INTERPRETING THE ESTIMATES THAT ARE CALCULATED WITH LESS THAN 10 TOWS**

Strategy	Depth Range	Period	Number of Tows	Discarded lbs per hr	s.e.	Bycatch lbs per hr	s.e.	Discarded lbs per lb Target Species	s.e.	Discarded lbs per lb Target Species	s.e.	Discarded lbs per lb of Groundfish	s.e.	Bycatch lbs per lb of Groundfish	s.e.	Bycatch lbs per lb of Groundfish
					Discarded lbs per hr		Bycatch lbs per hr	Discarded lbs per lb Target Species	Bycatch lbs per lb Target Species	Discarded lbs per lb of Groundfish	Bycatch lbs per lb of Groundfish					
Flatfish	100-200FM	MAR-APR 2002	1	14.012	---	14.012	---	0.037	---	0.037	---	0.034	---	0.034	---	---
Flatfish	100-200FM	JUL-AUG 2002	3	22.632	9.388	34.632	7.082	0.157	0.076	0.241	0.081	0.144	0.069	0.221	0.072	---
Flatfish	>200FM	SEP-OCT 2001	4	9.421	9.399	38.142	5.986	0.123	0.123	0.498	0.080	0.083	0.083	0.337	0.058	---
Longspine thornyhead																
DTS	0-100FM	MAR-APR 2002	2	-	0.125	-	6.631	-	0.000	-	0.014	-	0.000	-	0.013	---
DTS	0-100FM	MAY-JUN 2002	3	-	2.100	-	2.100	-	0.007	-	0.007	-	0.004	-	0.004	---
DTS	100-200FM	SEP-OCT 2001	1	15.886	---	15.886	---	0.106	---	0.106	---	0.050	---	0.050	---	---
DTS	100-200FM	MAR-APR 2002	4	1.067	0.796	1.067	0.796	0.002	0.001	0.002	0.001	0.002	0.001	0.002	0.001	---
DTS	100-200FM	MAY-JUN 2002	7	0.127	0.058	0.127	0.058	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	---
DTS	100-200FM	JUL-AUG 2002	8	-	15.711	-	15.711	-	0.042	-	0.042	-	0.035	-	0.035	---
DTS	>200FM	SEP-OCT 2001	4	17.477	10.519	17.477	10.519	0.016	0.010	0.016	0.010	0.015	0.009	0.015	0.009	---
DTS	>200FM	JAN-FEB 2002	46	15.339	6.072	15.339	6.072	0.052	0.022	0.052	0.022	0.052	0.021	0.052	0.021	---
DTS	>200FM	MAR-APR 2002	59	41.199	12.540	41.199	12.540	0.094	0.031	0.094	0.031	0.086	0.028	0.086	0.028	---
DTS	>200FM	MAY-JUN 2002	37	14.504	6.396	14.504	6.396	0.033	0.015	0.033	0.015	0.032	0.015	0.032	0.015	---
DTS	>200FM	JUL-AUG 2002	156	9.656	2.236	9.656	2.236	0.028	0.007	0.028	0.007	0.027	0.007	0.027	0.007	---
Shelf RKF	0-100FM	SEP-OCT 2001	4	-	0.426	-	0.426	-	0.005	-	0.005	-	0.003	-	0.003	---
Shelf RKF	0-100FM	NOV-DEC 2001	1	-	---	-	---	-	---	-	---	-	---	-	---	---
Shelf RKF	0-100FM	JAN-FEB 2002	3	-	23.569	-	23.569	-	0.039	-	0.039	-	0.025	-	0.025	---
Shelf RKF	0-100FM	MAR-APR 2002	8	-	1.000	-	13.238	-	0.003	-	0.036	-	0.002	-	0.027	---
Shelf RKF	0-100FM	MAY-JUN 2002	6	-	102.836	-	102.836	-	0.068	-	0.068	-	0.057	-	0.057	---
Shelf RKF	100-200FM	SEP-OCT 2001	5	-	1.346	-	1.346	-	0.009	-	0.009	-	0.006	-	0.006	---
Shelf RKF	100-200FM	JAN-FEB 2002	5	-	8.208	-	8.208	-	0.017	-	0.017	-	0.014	-	0.014	---
Shelf RKF	100-200FM	MAR-APR 2002	2	0.327	0.327	0.327	0.327	0.002	0.002	0.002	0.002	0.002	0.002	0.002	0.002	---
Shelf RKF	100-200FM	MAY-JUN 2002	2	-	52.917	-	50.745	-	0.164	-	0.149	-	0.106	-	0.096	---
Slope RKF	100-200FM	SEP-OCT 2001	1	-	---	-	---	-	---	-	---	-	---	-	---	---
Slope RKF	100-200FM	NOV-DEC 2001	5	-	68.545	-	68.545	-	0.184	-	0.184	-	0.138	-	0.138	---
Slope RKF	100-200FM	JAN-FEB 2002	18	-	2.456	-	7.320	-	0.009	-	0.025	-	0.007	-	0.021	---
Slope RKF	100-200FM	MAR-APR 2002	11	-	4.714	-	4.714	-	0.003	-	0.003	-	0.003	-	0.003	---
Slope RKF	100-200FM	MAY-JUN 2002	8	0.043	0.043	0.043	0.043	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	---
Slope RKF	100-200FM	JUL-AUG 2002	3	-	14.498	-	18.522	-	0.007	-	0.014	-	0.007	-	0.013	---
Slope RKF	>200FM	MAY-JUN 2002	10	0.431	0.431	0.431	0.431	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	---
Slope RKF	>200FM	JUL-AUG 2002	1	-	---	2.000	---	-	---	0.014	---	-	---	0.013	---	---
Flatfish	0-100FM	SEP-OCT 2001	127	-	0.313	-	0.313	-	0.002	-	0.002	-	0.002	-	0.002	---
Flatfish	0-100FM	NOV-DEC 2001	35	-	0.561	-	0.561	-	0.005	-	0.005	-	0.005	-	0.005	---
Flatfish	0-100FM	JAN-FEB 2002	53	-	0.707	-	0.707	-	0.002	-	0.002	-	0.002	-	0.002	---
Flatfish	0-100FM	MAR-APR 2002	37	-	0.033	-	0.337	-	0.000	-	0.001	-	0.000	-	0.001	---
Flatfish	0-100FM	MAY-JUN 2002	7	-	18.714	-	18.623	-	0.244	-	0.246	-	0.162	-	0.165	---
Flatfish	100-200FM	SEP-OCT 2001	34	-	0.313	-	0.313	-	0.001	-	0.001	-	0.001	-	0.001	---
Flatfish	100-200FM	NOV-DEC 2001	6	-	20.818	-	20.818	-	0.072	-	0.072	-	0.061	-	0.061	---
Flatfish	100-200FM	JAN-FEB 2002	5	-	0.078	-	0.080	-	0.000	-	0.000	-	0.000	-	0.000	---

Appendix Table IV.B. Continued. **NOTE: BE ESPECIALLY CAUTIOUS WHEN INTERPRETING THE ESTIMATES THAT ARE CALCULATED WITH LESS THAN 10 TOWS**

Strategy	Depth Range	Period	Number of Tows	Discarded lbs per hr	s.e.	Bycatch lbs per hr	s.e.	Discarded lbs per lb Target Species	s.e.	Bycatch lbs per lb Target Species	s.e.	Discarded lbs per lb of Groundfish	s.e.	Bycatch lbs per lb of Groundfish	s.e.
					Discarded lbs per hr		Bycatch lbs per hr		Discarded lbs per lb Target		Bycatch lbs per lb Target		Discarded lbs per lb of Groundfish		Bycatch lbs per lb of Groundfish
Flatfish	100-200FM	MAR-APR 2002	1	-	---	-	---	-	---	-	---	-	---	-	---
Flatfish	100-200FM	JUL-AUG 2002	3	-	9.388	-	7.082	-	0.076	-	0.081	-	0.069	-	0.072
Flatfish	>200FM	SEP-OCT 2001	4	-	9.399	-	5.986	-	0.123	-	0.080	-	0.083	-	0.058
Shortspine thornyhead															
DTS	0-100FM	MAR-APR 2002	2	-	0.125	-	6.631	-	0.000	-	0.014	-	0.000	-	0.013
DTS	0-100FM	MAY-JUN 2002	3	3.593	2.524	3.593	2.524	0.009	0.007	0.009	0.007	0.006	0.004	0.006	0.004
DTS	100-200FM	SEP-OCT 2001	1	-	---	-	---	-	---	-	---	-	---	-	---
DTS	100-200FM	MAR-APR 2002	4	12.972	8.248	12.972	8.248	0.020	0.015	0.020	0.015	0.019	0.014	0.019	0.014
DTS	100-200FM	MAY-JUN 2002	7	1.085	0.407	1.085	0.407	0.004	0.003	0.004	0.003	0.004	0.002	0.004	0.002
DTS	100-200FM	JUL-AUG 2002	8	3.347	2.123	3.347	2.123	0.009	0.006	0.009	0.006	0.008	0.005	0.008	0.005
DTS	>200FM	SEP-OCT 2001	4	-	10.519	-	10.519	-	0.010	-	0.010	-	0.009	-	0.009
DTS	>200FM	JAN-FEB 2002	46	18.145	4.748	18.145	4.748	0.062	0.018	0.062	0.018	0.061	0.018	0.061	0.018
DTS	>200FM	MAR-APR 2002	59	19.039	5.455	19.039	5.455	0.043	0.013	0.043	0.013	0.040	0.012	0.040	0.012
DTS	>200FM	MAY-JUN 2002	37	0.462	0.263	0.462	0.263	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001
DTS	>200FM	JUL-AUG 2002	156	2.893	0.583	2.893	0.583	0.008	0.002	0.008	0.002	0.008	0.002	0.008	0.002
Shelf RKF	0-100FM	SEP-OCT 2001	4	0.322	0.243	0.322	0.243	0.004	0.003	0.004	0.003	0.002	0.002	0.002	0.002
Shelf RKF	0-100FM	NOV-DEC 2001	1	-	---	-	---	-	---	-	---	-	---	-	---
Shelf RKF	0-100FM	JAN-FEB 2002	3	-	23.569	-	23.569	-	0.039	-	0.039	-	0.025	-	0.025
Shelf RKF	0-100FM	MAR-APR 2002	8	-	1.000	-	13.238	-	0.003	-	0.036	-	0.002	-	0.027
Shelf RKF	0-100FM	MAY-JUN 2002	6	-	102.836	-	102.836	-	0.068	-	0.068	-	0.057	-	0.057
Shelf RKF	100-200FM	SEP-OCT 2001	5	0.612	0.377	0.612	0.377	0.004	0.003	0.004	0.003	0.003	0.002	0.003	0.002
Shelf RKF	100-200FM	JAN-FEB 2002	5	0.478	0.478	0.830	0.830	0.001	0.001	0.002	0.002	0.001	0.001	0.001	0.001
Shelf RKF	100-200FM	MAR-APR 2002	2	-	0.327	-	0.327	-	0.002	-	0.002	-	0.002	-	0.002
Shelf RKF	100-200FM	MAY-JUN 2002	2	-	52.917	50.000	50.000	-	0.164	0.158	0.158	-	0.106	0.102	0.102
Slope RKF	100-200FM	SEP-OCT 2001	1	-	---	-	---	-	---	-	---	-	---	-	---
Slope RKF	100-200FM	NOV-DEC 2001	5	32.631	20.005	32.631	20.005	0.084	0.052	0.084	0.052	0.065	0.040	0.065	0.040
Slope RKF	100-200FM	JAN-FEB 2002	18	2.396	1.369	3.890	2.249	0.008	0.005	0.013	0.008	0.007	0.004	0.011	0.006
Slope RKF	100-200FM	MAR-APR 2002	11	5.341	2.776	5.341	2.776	0.003	0.002	0.003	0.002	0.003	0.002	0.003	0.002
Slope RKF	100-200FM	MAY-JUN 2002	8	2.238	0.818	3.119	1.233	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001
Slope RKF	100-200FM	JUL-AUG 2002	3	-	14.498	-	18.522	-	0.007	-	0.014	-	0.007	-	0.013
Slope RKF	>200FM	MAY-JUN 2002	10	0.156	0.156	0.156	0.156	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
Slope RKF	>200FM	JUL-AUG 2002	1	-	---	4.000	---	-	---	0.027	---	-	---	0.025	---
Flatfish	0-100FM	SEP-OCT 2001	127	0.033	0.019	0.033	0.019	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
Flatfish	0-100FM	NOV-DEC 2001	35	-	0.561	-	0.561	-	0.005	-	0.005	-	0.005	-	0.005
Flatfish	0-100FM	JAN-FEB 2002	53	0.009	0.009	0.009	0.009	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
Flatfish	0-100FM	MAR-APR 2002	37	-	0.033	-	0.337	-	0.000	-	0.001	-	0.000	-	0.001
Flatfish	0-100FM	MAY-JUN 2002	7	-	18.714	-	18.623	-	0.244	-	0.246	-	0.162	-	0.165
Flatfish	100-200FM	SEP-OCT 2001	34	0.208	0.091	0.213	0.090	0.001	0.000	0.001	0.000	0.001	0.000	0.001	0.000
Flatfish	100-200FM	NOV-DEC 2001	6	4.433	3.141	4.433	3.141	0.013	0.010	0.013	0.010	0.012	0.009	0.012	0.009
Flatfish	100-200FM	JAN-FEB 2002	5	3.296	2.554	3.296	2.554	0.011	0.009	0.011	0.009	0.010	0.008	0.010	0.008

Appendix Table IV.B. Continued. **NOTE: BE ESPECIALLY CAUTIOUS WHEN INTERPRETING THE ESTIMATES THAT ARE CALCULATED WITH LESS THAN 10 TOWS**

Strategy	Depth Range	Period	Number of Tows	Discarded lbs per hr	s.e.	Bycatch lbs per hr	s.e.	Discarded lbs per lb Target Species	s.e.	Discarded lbs per lb Target Species	s.e.	Discarded lbs per lb of Groundfish	s.e.	Bycatch lbs per lb of Groundfish	s.e.
					Discarded lbs per hr		Bycatch lbs per hr	Discarded lbs per lb Target Species	Bycatch lbs per lb Target Species	Discarded lbs per lb of Groundfish	Bycatch lbs per lb of Groundfish				
Flatfish	100-200FM	MAR-APR 2002	1	0.858	---	0.858	---	0.002	---	0.002	---	0.002	---	0.002	---
Flatfish	100-200FM	JUL-AUG 2002	3	0.888	0.767	0.888	0.767	0.006	0.005	0.006	0.005	0.006	0.005	0.006	0.005
Flatfish	>200FM	SEP-OCT 2001	4	7.041	1.100	7.041	1.100	0.092	0.015	0.092	0.015	0.062	0.011	0.062	0.011
Thornyheads															
DTS	0-100FM	MAR-APR 2002	2	-	0.125	-	6.631	-	0.000	-	0.014	-	0.000	-	0.013
DTS	0-100FM	MAY-JUN 2002	3	1.596	1.596	1.596	1.596	0.004	0.004	0.004	0.004	0.003	0.003	0.003	0.003
DTS	100-200FM	SEP-OCT 2001	1	-	---	-	---	-	---	-	---	-	---	-	---
DTS	100-200FM	MAR-APR 2002	4	-	8.248	-	8.248	-	0.015	-	0.015	-	0.014	-	0.014
DTS	100-200FM	MAY-JUN 2002	7	-	0.407	-	0.407	-	0.003	-	0.003	-	0.002	-	0.002
DTS	100-200FM	JUL-AUG 2002	8	-	2.123	-	2.123	-	0.006	-	0.006	-	0.005	-	0.005
DTS	>200FM	SEP-OCT 2001	4	-	10.519	-	10.519	-	0.010	-	0.010	-	0.009	-	0.009
DTS	>200FM	JAN-FEB 2002	46	14.703	5.702	14.703	5.702	0.050	0.020	0.050	0.020	0.049	0.020	0.049	0.020
DTS	>200FM	MAR-APR 2002	59	13.930	11.789	13.930	11.789	0.032	0.027	0.032	0.027	0.029	0.025	0.029	0.025
DTS	>200FM	MAY-JUN 2002	37	19.436	12.747	19.436	12.747	0.044	0.029	0.044	0.029	0.043	0.029	0.043	0.029
DTS	>200FM	JUL-AUG 2002	156	2.839	0.928	2.839	0.928	0.008	0.003	0.008	0.003	0.008	0.003	0.008	0.003
Shelf RKF	0-100FM	SEP-OCT 2001	4	-	0.243	-	0.243	-	0.003	-	0.003	-	0.002	-	0.002
Shelf RKF	0-100FM	NOV-DEC 2001	1	-	---	-	---	-	---	-	---	-	---	-	---
Shelf RKF	0-100FM	JAN-FEB 2002	3	-	23.569	-	23.569	-	0.039	-	0.039	-	0.025	-	0.025
Shelf RKF	0-100FM	MAR-APR 2002	8	-	1.000	-	13.238	-	0.003	-	0.036	-	0.002	-	0.027
Shelf RKF	0-100FM	MAY-JUN 2002	6	-	102.836	-	102.836	-	0.068	-	0.068	-	0.057	-	0.057
Shelf RKF	100-200FM	SEP-OCT 2001	5	-	0.377	-	0.377	-	0.003	-	0.003	-	0.002	-	0.002
Shelf RKF	100-200FM	JAN-FEB 2002	5	-	0.478	-	0.830	-	0.001	-	0.002	-	0.001	-	0.001
Shelf RKF	100-200FM	MAR-APR 2002	2	-	0.327	-	0.327	-	0.002	-	0.002	-	0.002	-	0.002
Shelf RKF	100-200FM	MAY-JUN 2002	2	11.292	11.292	11.292	11.292	0.036	0.036	0.036	0.036	0.023	0.023	0.023	0.023
Slope RKF	100-200FM	SEP-OCT 2001	1	-	---	-	---	-	---	-	---	-	---	-	---
Slope RKF	100-200FM	NOV-DEC 2001	5	9.949	9.949	9.949	9.949	0.026	0.026	0.026	0.026	0.020	0.020	0.020	0.020
Slope RKF	100-200FM	JAN-FEB 2002	18	-	1.369	-	2.249	-	0.005	-	0.008	-	0.004	-	0.006
Slope RKF	100-200FM	MAR-APR 2002	11	4.232	2.748	4.232	2.748	0.002	0.002	0.002	0.002	0.002	0.002	0.002	0.002
Slope RKF	100-200FM	MAY-JUN 2002	8	-	0.818	-	1.233	-	0.001	-	0.001	-	0.001	-	0.001
Slope RKF	100-200FM	JUL-AUG 2002	3	-	14.498	6.317	6.317	-	0.007	0.003	0.003	-	0.007	0.003	0.003
Slope RKF	>200FM	MAY-JUN 2002	10	0.405	0.289	0.504	0.297	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
Slope RKF	>200FM	JUL-AUG 2002	1	-	---	-	---	-	---	-	---	-	---	-	---
Flatfish	0-100FM	SEP-OCT 2001	127	-	0.019	-	0.019	-	0.000	-	0.000	-	0.000	-	0.000
Flatfish	0-100FM	NOV-DEC 2001	35	-	0.561	-	0.561	-	0.005	-	0.005	-	0.005	-	0.005
Flatfish	0-100FM	JAN-FEB 2002	53	-	0.009	-	0.009	-	0.000	-	0.000	-	0.000	-	0.000
Flatfish	0-100FM	MAR-APR 2002	37	-	0.033	-	0.337	-	0.000	-	0.001	-	0.000	-	0.001
Flatfish	0-100FM	MAY-JUN 2002	7	-	18.714	-	18.623	-	0.244	-	0.246	-	0.162	-	0.165
Flatfish	100-200FM	SEP-OCT 2001	34	-	0.091	-	0.090	-	0.000	-	0.000	-	0.000	-	0.000
Flatfish	100-200FM	NOV-DEC 2001	6	0.377	0.377	0.377	0.377	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001
Flatfish	100-200FM	JAN-FEB 2002	5	-	2.554	-	2.554	-	0.009	-	0.009	-	0.008	-	0.008

Appendix Table IV.B. Continued. **NOTE: BE ESPECIALLY CAUTIOUS WHEN INTERPRETING THE ESTIMATES THAT ARE CALCULATED WITH LESS THAN 10 TOWS**

Strategy	Depth Range	Period	Number of Tows	Discarded lbs per hr	s.e.	Bycatch lbs per hr	s.e.	Discarded lbs per lb Target Species	s.e.	Discarded lbs per lb Target Species	s.e.	Discarded lbs per lb of Groundfish	s.e.	Bycatch lbs per lb of Groundfish	s.e.
					Discarded lbs per hr		Bycatch lbs per hr	Discarded lbs per lb Target Species	Bycatch lbs per lb Target Species	Discarded lbs per lb of Groundfish	Bycatch lbs per lb of Groundfish				
Flatfish	100-200FM	MAR-APR 2002	1	-	---	-	---	-	---	-	---	-	---	-	---
Flatfish	100-200FM	JUL-AUG 2002	3	-	0.767	-	0.767	-	0.005	-	0.005	-	0.005	-	0.005
Flatfish	>200FM	SEP-OCT 2001	4	-	1.100	-	1.100	-	0.015	-	0.015	-	0.011	-	0.011
Sablefish															
DTS	0-100FM	MAR-APR 2002	2	242.564	242.564	242.564	242.564	0.524	0.524	0.524	0.524	0.479	0.479	0.479	0.479
DTS	0-100FM	MAY-JUN 2002	3	84.532	43.085	84.532	43.085	0.216	0.129	0.216	0.129	0.141	0.077	0.141	0.077
DTS	100-200FM	SEP-OCT 2001	1	980.934	---	980.934	---	6.571	---	6.571	---	3.076	---	3.076	---
DTS	100-200FM	MAR-APR 2002	4	13.652	8.646	13.652	8.646	0.022	0.016	0.022	0.016	0.020	0.015	0.020	0.015
DTS	100-200FM	MAY-JUN 2002	7	11.046	3.705	11.046	3.705	0.042	0.030	0.042	0.030	0.036	0.022	0.036	0.022
DTS	100-200FM	JUL-AUG 2002	8	4.721	2.260	4.721	2.260	0.013	0.006	0.013	0.006	0.011	0.005	0.011	0.005
DTS	>200FM	SEP-OCT 2001	4	84.458	55.538	84.458	55.538	0.078	0.052	0.078	0.052	0.074	0.050	0.074	0.050
DTS	>200FM	JAN-FEB 2002	46	39.056	11.090	39.056	11.090	0.133	0.041	0.133	0.041	0.131	0.040	0.131	0.040
DTS	>200FM	MAR-APR 2002	59	55.005	15.433	55.005	15.433	0.125	0.038	0.125	0.038	0.114	0.034	0.114	0.034
DTS	>200FM	MAY-JUN 2002	37	19.664	12.574	19.664	12.574	0.045	0.029	0.045	0.029	0.044	0.029	0.044	0.029
DTS	>200FM	JUL-AUG 2002	156	18.927	2.413	18.927	2.413	0.055	0.008	0.055	0.008	0.053	0.008	0.053	0.008
Shelf RKF	0-100FM	SEP-OCT 2001	4	13.039	3.445	13.039	3.445	0.151	0.058	0.151	0.058	0.101	0.042	0.101	0.042
Shelf RKF	0-100FM	NOV-DEC 2001	1	11.086	---	11.086	---	0.022	---	0.022	---	0.012	---	0.012	---
Shelf RKF	0-100FM	JAN-FEB 2002	3	953.224	936.270	1,185.570	1,164.312	1.581	1.554	1.966	1.932	1.004	0.986	1.248	1.227
Shelf RKF	0-100FM	MAR-APR 2002	8	22.858	12.570	35.952	16.128	0.056	0.033	0.089	0.045	0.042	0.025	0.067	0.033
Shelf RKF	0-100FM	MAY-JUN 2002	6	1,653.956	641.170	1,771.242	664.377	1.054	0.459	1.129	0.479	0.912	0.365	0.976	0.379
Shelf RKF	100-200FM	SEP-OCT 2001	5	17.293	6.617	17.293	6.617	0.103	0.062	0.103	0.062	0.072	0.040	0.072	0.040
Shelf RKF	100-200FM	JAN-FEB 2002	5	95.886	54.889	178.078	112.221	0.203	0.120	0.378	0.243	0.163	0.097	0.303	0.197
Shelf RKF	100-200FM	MAR-APR 2002	2	0.944	0.944	0.944	0.944	0.006	0.006	0.006	0.006	0.005	0.005	0.005	0.005
Shelf RKF	100-200FM	MAY-JUN 2002	2	4.612	4.612	4.612	4.612	0.015	0.015	0.015	0.015	0.009	0.009	0.009	0.009
Slope RKF	100-200FM	SEP-OCT 2001	1	47.673	---	47.673	---	0.199	---	0.199	---	0.128	---	0.128	---
Slope RKF	100-200FM	NOV-DEC 2001	5	330.942	211.363	330.942	211.363	0.856	0.551	0.856	0.551	0.664	0.425	0.664	0.425
Slope RKF	100-200FM	JAN-FEB 2002	18	19.010	11.978	29.811	14.296	0.061	0.041	0.096	0.052	0.052	0.034	0.081	0.042
Slope RKF	100-200FM	MAR-APR 2002	11	22.578	12.668	25.259	12.943	0.012	0.008	0.013	0.009	0.012	0.008	0.013	0.009
Slope RKF	100-200FM	MAY-JUN 2002	8	6.158	2.136	28.244	15.639	0.003	0.002	0.013	0.009	0.003	0.002	0.012	0.009
Slope RKF	100-200FM	JUL-AUG 2002	3	117.142	111.838	125.426	109.365	0.059	0.058	0.063	0.060	0.056	0.055	0.060	0.057
Slope RKF	>200FM	MAY-JUN 2002	10	1.267	0.941	2.063	1.180	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001
Slope RKF	>200FM	JUL-AUG 2002	1	-	---	6.000	---	-	---	0.041	---	-	---	0.038	---
Flatfish	0-100FM	SEP-OCT 2001	127	5.672	1.825	6.336	1.840	0.036	0.012	0.041	0.013	0.034	0.011	0.038	0.012
Flatfish	0-100FM	NOV-DEC 2001	35	16.799	7.552	16.799	7.552	0.142	0.071	0.142	0.071	0.130	0.064	0.130	0.064
Flatfish	0-100FM	JAN-FEB 2002	53	4.680	1.571	5.913	1.857	0.010	0.004	0.013	0.005	0.010	0.004	0.012	0.005
Flatfish	0-100FM	MAR-APR 2002	37	3.882	1.948	5.058	2.117	0.013	0.007	0.017	0.008	0.013	0.007	0.016	0.008
Flatfish	0-100FM	MAY-JUN 2002	7	3.905	2.754	8.110	4.851	0.051	0.037	0.106	0.067	0.034	0.025	0.070	0.046
Flatfish	100-200FM	SEP-OCT 2001	34	14.138	6.863	17.582	6.893	0.043	0.021	0.053	0.021	0.041	0.020	0.051	0.020
Flatfish	100-200FM	NOV-DEC 2001	6	284.194	139.752	284.194	139.752	0.839	0.503	0.839	0.503	0.741	0.418	0.741	0.418
Flatfish	100-200FM	JAN-FEB 2002	5	27.292	12.103	37.768	17.601	0.090	0.047	0.125	0.068	0.082	0.042	0.113	0.061

Appendix Table IV.B. Continued. **NOTE: BE ESPECIALLY CAUTIOUS WHEN INTERPRETING THE ESTIMATES THAT ARE CALCULATED WITH LESS THAN 10 TOWS**

Strategy	Depth Range	Period	Number of Tows	Discarded lbs per hr	s.e.	Bycatch lbs per hr	s.e.	Discarded lbs per lb Target Species	s.e.	Discarded lbs per lb Target Species	s.e.	Discarded lbs per lb of Groundfish	s.e.	Bycatch lbs per lb of Groundfish	s.e.
					Discarded lbs per hr		Bycatch lbs per hr	Discarded lbs per lb Target Species	Bycatch lbs per lb Target Species	Discarded lbs per lb of Groundfish	Bycatch lbs per lb of Groundfish				
Flatfish	100-200FM	MAR-APR 2002	1	33.742	---	33.742	---	0.089	---	0.089	---	0.083	---	0.083	---
Flatfish	100-200FM	JUL-AUG 2002	3	34.380	26.361	35.136	25.932	0.239	0.188	0.244	0.186	0.219	0.172	0.224	0.170
Flatfish	>200FM	SEP-OCT 2001	4	13.986	8.011	13.986	8.011	0.183	0.105	0.183	0.105	0.124	0.071	0.124	0.071
Bocaccio															
DTS	0-100FM	MAR-APR 2002	2	0.375	0.375	3.040	0.838	0.001	0.001	0.007	0.006	0.001	0.001	0.006	0.005
DTS	0-100FM	MAY-JUN 2002	3	2.724	1.571	25.681	21.853	0.007	0.005	0.066	0.057	0.005	0.003	0.043	0.037
DTS	100-200FM	SEP-OCT 2001	1	-	---	-	---	-	---	-	---	-	---	-	---
DTS	100-200FM	MAR-APR 2002	4	-	8.646	-	8.646	-	0.016	-	0.016	-	0.015	-	0.015
DTS	100-200FM	MAY-JUN 2002	7	-	3.705	3.333	2.170	-	0.030	0.013	0.011	-	0.022	0.011	0.008
DTS	100-200FM	JUL-AUG 2002	8	5.072	5.072	5.072	5.072	0.014	0.014	0.014	0.014	0.011	0.011	0.011	0.011
DTS	>200FM	SEP-OCT 2001	4	-	55.538	-	55.538	-	0.052	-	0.052	-	0.050	-	0.050
DTS	>200FM	JAN-FEB 2002	46	-	11.090	-	11.090	-	0.041	-	0.041	-	0.040	-	0.040
DTS	>200FM	MAR-APR 2002	59	-	15.433	-	15.433	-	0.038	-	0.038	-	0.034	-	0.034
DTS	>200FM	MAY-JUN 2002	37	-	12.574	-	12.574	-	0.029	-	0.029	-	0.029	-	0.029
DTS	>200FM	JUL-AUG 2002	156	-	2.413	-	2.413	-	0.008	-	0.008	-	0.008	-	0.008
Shelf RKF	0-100FM	SEP-OCT 2001	4	5.420	3.691	5.420	3.691	0.063	0.045	0.063	0.045	0.042	0.030	0.042	0.030
Shelf RKF	0-100FM	NOV-DEC 2001	1	123.420	---	123.420	---	0.246	---	0.246	---	0.139	---	0.139	---
Shelf RKF	0-100FM	JAN-FEB 2002	3	42.378	42.378	42.378	42.378	0.070	0.070	0.070	0.070	0.045	0.045	0.045	0.045
Shelf RKF	0-100FM	MAR-APR 2002	8	3.226	3.226	3.226	3.226	0.008	0.008	0.008	0.008	0.006	0.006	0.006	0.006
Shelf RKF	0-100FM	MAY-JUN 2002	6	302.090	238.796	302.090	238.796	0.192	0.154	0.192	0.154	0.167	0.132	0.167	0.132
Shelf RKF	100-200FM	SEP-OCT 2001	5	7.391	2.514	7.391	2.514	0.044	0.026	0.044	0.026	0.031	0.017	0.031	0.017
Shelf RKF	100-200FM	JAN-FEB 2002	5	-	54.889	-	112.221	-	0.120	-	0.243	-	0.097	-	0.197
Shelf RKF	100-200FM	MAR-APR 2002	2	200.275	195.250	200.275	195.250	1.201	1.185	1.201	1.185	1.001	0.986	1.001	0.986
Shelf RKF	100-200FM	MAY-JUN 2002	2	92.867	92.867	92.867	92.867	0.294	0.294	0.294	0.294	0.190	0.190	0.190	0.190
Slope RKF	100-200FM	SEP-OCT 2001	1	-	---	-	---	-	---	-	---	-	---	-	---
Slope RKF	100-200FM	NOV-DEC 2001	5	54.735	17.621	54.735	17.621	0.142	0.048	0.142	0.048	0.110	0.036	0.110	0.036
Slope RKF	100-200FM	JAN-FEB 2002	18	2.363	2.299	2.363	2.299	0.008	0.007	0.008	0.007	0.006	0.006	0.006	0.006
Slope RKF	100-200FM	MAR-APR 2002	11	8.929	3.255	8.929	3.255	0.005	0.003	0.005	0.003	0.005	0.003	0.005	0.003
Slope RKF	100-200FM	MAY-JUN 2002	8	-	2.136	2.053	2.053	-	0.002	0.001	0.001	-	0.002	0.001	0.001
Slope RKF	100-200FM	JUL-AUG 2002	3	-	111.838	-	109.365	-	0.058	-	0.060	-	0.055	-	0.057
Slope RKF	>200FM	MAY-JUN 2002	10	-	0.941	-	1.180	-	0.001	-	0.001	-	0.001	-	0.001
Slope RKF	>200FM	JUL-AUG 2002	1	-	---	-	---	-	---	-	---	-	---	-	---
Flatfish	0-100FM	SEP-OCT 2001	127	3.145	1.382	3.206	1.382	0.020	0.009	0.021	0.009	0.019	0.008	0.019	0.008
Flatfish	0-100FM	NOV-DEC 2001	35	24.621	11.691	24.621	11.691	0.208	0.109	0.208	0.109	0.190	0.098	0.190	0.098
Flatfish	0-100FM	JAN-FEB 2002	53	0.090	0.090	1.378	0.395	0.000	0.000	0.003	0.001	0.000	0.000	0.003	0.001
Flatfish	0-100FM	MAR-APR 2002	37	0.408	0.199	0.748	0.306	0.001	0.001	0.002	0.001	0.001	0.001	0.002	0.001
Flatfish	0-100FM	MAY-JUN 2002	7	0.122	0.122	3.909	2.953	0.002	0.002	0.051	0.039	0.001	0.001	0.034	0.027
Flatfish	100-200FM	SEP-OCT 2001	34	1.350	0.890	2.889	0.998	0.004	0.003	0.009	0.003	0.004	0.003	0.008	0.003
Flatfish	100-200FM	NOV-DEC 2001	6	11.868	8.852	11.868	8.852	0.035	0.028	0.035	0.028	0.031	0.024	0.031	0.024
Flatfish	100-200FM	JAN-FEB 2002	5	-	12.103	1.931	1.752	-	0.047	0.006	0.006	-	0.042	0.006	0.005

Appendix Table IV.B. Continued. **NOTE: BE ESPECIALLY CAUTIOUS WHEN INTERPRETING THE ESTIMATES THAT ARE CALCULATED WITH LESS THAN 10 TOWS**

Strategy	Depth Range	Period	Number of Tows	Discarded lbs per hr	s.e.	Bycatch lbs per hr	s.e.	Discarded lbs per lb Target Species	s.e.	Bycatch lbs per lb Target Species	s.e.	Discarded lbs per lb of Groundfish	s.e.	Bycatch lbs per lb of Groundfish	s.e.
					Discarded lbs per hr		Bycatch lbs per hr		Discarded lbs per lb of Groundfish		Bycatch lbs per lb of Groundfish				
Flatfish	100-200FM	MAR-APR 2002	1	-	---	-	---	-	---	-	---	-	---	-	---
Flatfish	100-200FM	JUL-AUG 2002	3	0.612	0.612	0.612	0.612	0.004	0.004	0.004	0.004	0.004	0.004	0.004	0.004
Flatfish	>200FM	SEP-OCT 2001	4	-	8.011	-	8.011	-	0.105	-	0.105	-	0.071	-	0.071
Chilipepper															
DTS	0-100FM	MAR-APR 2002	2	-	0.375	18.767	5.255	-	0.001	0.041	0.039	-	0.001	0.037	0.033
DTS	0-100FM	MAY-JUN 2002	3	7.787	6.526	19.266	10.002	0.020	0.017	0.049	0.030	0.013	0.011	0.032	0.018
DTS	100-200FM	SEP-OCT 2001	1	-	---	27.953	---	-	---	0.187	---	-	---	0.088	---
DTS	100-200FM	MAR-APR 2002	4	-	8.646	-	8.646	-	0.016	-	0.016	-	0.015	-	0.015
DTS	100-200FM	MAY-JUN 2002	7	1.000	0.718	11.976	8.013	0.004	0.003	0.046	0.038	0.003	0.003	0.039	0.030
DTS	100-200FM	JUL-AUG 2002	8	4.770	4.645	4.770	4.645	0.013	0.012	0.013	0.012	0.011	0.010	0.011	0.010
DTS	>200FM	SEP-OCT 2001	4	-	55.538	-	55.538	-	0.052	-	0.052	-	0.050	-	0.050
DTS	>200FM	JAN-FEB 2002	46	-	11.090	-	11.090	-	0.041	-	0.041	-	0.040	-	0.040
DTS	>200FM	MAR-APR 2002	59	0.001	0.001	0.001	0.001	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
DTS	>200FM	MAY-JUN 2002	37	0.027	0.020	0.027	0.020	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
DTS	>200FM	JUL-AUG 2002	156	-	2.413	-	2.413	-	0.008	-	0.008	-	0.008	-	0.008
Shelf RKF	0-100FM	SEP-OCT 2001	4	5.438	2.407	5.438	2.407	0.063	0.032	0.063	0.032	0.042	0.023	0.042	0.023
Shelf RKF	0-100FM	NOV-DEC 2001	1	513.633	---	513.633	---	1.026	---	1.026	---	0.578	---	0.578	---
Shelf RKF	0-100FM	JAN-FEB 2002	3	1,401.024	796.626	1,401.024	796.626	2.324	1.362	2.324	1.362	1.475	0.866	1.475	0.866
Shelf RKF	0-100FM	MAR-APR 2002	8	69.474	68.709	69.474	68.709	0.171	0.169	0.171	0.169	0.129	0.128	0.129	0.128
Shelf RKF	0-100FM	MAY-JUN 2002	6	636.758	269.256	636.758	269.256	0.406	0.189	0.406	0.189	0.351	0.152	0.351	0.152
Shelf RKF	100-200FM	SEP-OCT 2001	5	13.743	9.508	13.743	9.508	0.082	0.064	0.082	0.064	0.058	0.044	0.058	0.044
Shelf RKF	100-200FM	JAN-FEB 2002	5	74.270	33.796	74.270	33.796	0.158	0.076	0.158	0.076	0.126	0.062	0.126	0.062
Shelf RKF	100-200FM	MAR-APR 2002	2	370.312	369.953	370.312	369.953	2.221	2.220	2.221	2.220	1.851	1.850	1.851	1.850
Shelf RKF	100-200FM	MAY-JUN 2002	2	38.472	35.438	38.472	35.438	0.122	0.109	0.122	0.109	0.079	0.070	0.079	0.070
Slope RKF	100-200FM	SEP-OCT 2001	1	-	---	-	---	-	---	-	---	-	---	-	---
Slope RKF	100-200FM	NOV-DEC 2001	5	-	17.621	-	17.621	-	0.048	-	0.048	-	0.036	-	0.036
Slope RKF	100-200FM	JAN-FEB 2002	18	4.967	3.787	5.191	3.781	0.016	0.013	0.017	0.013	0.013	0.010	0.014	0.011
Slope RKF	100-200FM	MAR-APR 2002	11	37.244	27.137	37.244	27.137	0.020	0.016	0.020	0.016	0.020	0.016	0.020	0.016
Slope RKF	100-200FM	MAY-JUN 2002	8	2.246	0.743	3.321	1.530	0.001	0.001	0.002	0.001	0.001	0.001	0.001	0.001
Slope RKF	100-200FM	JUL-AUG 2002	3	121.118	120.723	121.118	120.723	0.061	0.061	0.061	0.061	0.058	0.058	0.058	0.058
Slope RKF	>200FM	MAY-JUN 2002	10	0.160	0.160	0.287	0.180	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
Slope RKF	>200FM	JUL-AUG 2002	1	-	---	-	---	-	---	-	---	-	---	-	---
Flatfish	0-100FM	SEP-OCT 2001	127	2.274	1.099	9.934	3.019	0.015	0.007	0.064	0.020	0.013	0.007	0.059	0.019
Flatfish	0-100FM	NOV-DEC 2001	35	41.561	20.791	51.672	22.821	0.352	0.192	0.437	0.217	0.321	0.173	0.400	0.195
Flatfish	0-100FM	JAN-FEB 2002	53	3.498	2.063	4.804	2.373	0.007	0.005	0.010	0.005	0.007	0.005	0.010	0.005
Flatfish	0-100FM	MAR-APR 2002	37	0.279	0.144	0.807	0.327	0.001	0.001	0.003	0.001	0.001	0.001	0.003	0.001
Flatfish	0-100FM	MAY-JUN 2002	7	10.147	6.707	33.250	28.065	0.132	0.091	0.433	0.370	0.088	0.062	0.287	0.248
Flatfish	100-200FM	SEP-OCT 2001	34	0.361	0.248	3.890	2.367	0.001	0.001	0.012	0.007	0.001	0.001	0.011	0.007
Flatfish	100-200FM	NOV-DEC 2001	6	16.833	11.754	16.833	11.754	0.050	0.037	0.050	0.037	0.044	0.032	0.044	0.032
Flatfish	100-200FM	JAN-FEB 2002	5	20.272	6.702	33.245	11.680	0.067	0.030	0.110	0.050	0.061	0.026	0.100	0.045

Appendix Table IV.B. Continued. **NOTE: BE ESPECIALLY CAUTIOUS WHEN INTERPRETING THE ESTIMATES THAT ARE CALCULATED WITH LESS THAN 10 TOWS**

Strategy	Depth Range	Period	Number of Tows	Discarded lbs per hr	s.e.	Bycatch lbs per hr	s.e.	Discarded Target Species	s.e.	Bycatch Target Species	s.e.	Discarded lbs per lb of Groundfish	s.e.	Bycatch lbs per lb of Groundfish	s.e.
					Discarded lbs per hr		Bycatch lbs per hr		Discarded lbs per lb Target		Bycatch lbs per lb Target				
Flatfish	100-200FM	MAR-APR 2002	1	1,335.100	---	1,348.434	---	3.534	---	3.569	---	3.268	---	3.300	---
Flatfish	100-200FM	JUL-AUG 2002	3	0.216	0.216	0.216	0.216	0.002	0.002	0.002	0.002	0.001	0.001	0.001	0.001
Flatfish	>200FM	SEP-OCT 2001	4	-	8.011	-	8.011	-	0.105	-	0.105	-	0.071	-	0.071
Canary RKF															
DTS	0-100FM	MAR-APR 2002	2	-	0.375	-	5.255	-	0.001	-	0.039	-	0.001	-	0.033
DTS	0-100FM	MAY-JUN 2002	3	2.700	1.460	2.700	1.460	0.007	0.004	0.007	0.004	0.004	0.003	0.004	0.003
DTS	100-200FM	SEP-OCT 2001	1	-	---	-	---	-	---	-	---	-	---	-	---
DTS	100-200FM	MAR-APR 2002	4	-	8.646	-	8.646	-	0.016	-	0.016	-	0.015	-	0.015
DTS	100-200FM	MAY-JUN 2002	7	-	0.718	1.563	1.091	-	0.003	0.006	0.005	-	0.003	0.005	0.004
DTS	100-200FM	JUL-AUG 2002	8	-	4.645	-	4.645	-	0.012	-	0.012	-	0.010	-	0.010
DTS	>200FM	SEP-OCT 2001	4	-	55.538	-	55.538	-	0.052	-	0.052	-	0.050	-	0.050
DTS	>200FM	JAN-FEB 2002	46	-	11.090	-	11.090	-	0.041	-	0.041	-	0.040	-	0.040
DTS	>200FM	MAR-APR 2002	59	-	0.001	-	0.001	-	0.000	-	0.000	-	0.000	-	0.000
DTS	>200FM	MAY-JUN 2002	37	-	0.020	-	0.020	-	0.000	-	0.000	-	0.000	-	0.000
DTS	>200FM	JUL-AUG 2002	156	-	2.413	-	2.413	-	0.008	-	0.008	-	0.008	-	0.008
Shelf RKF	0-100FM	SEP-OCT 2001	4	0.099	0.099	0.099	0.099	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001
Shelf RKF	0-100FM	NOV-DEC 2001	1	-	---	-	---	-	---	-	---	-	---	-	---
Shelf RKF	0-100FM	JAN-FEB 2002	3	-	796.626	-	796.626	-	1.362	-	1.362	-	0.866	-	0.866
Shelf RKF	0-100FM	MAR-APR 2002	8	-	68.709	-	68.709	-	0.169	-	0.169	-	0.128	-	0.128
Shelf RKF	0-100FM	MAY-JUN 2002	6	-	269.256	-	269.256	-	0.189	-	0.189	-	0.152	-	0.152
Shelf RKF	100-200FM	SEP-OCT 2001	5	-	9.508	-	9.508	-	0.064	-	0.064	-	0.044	-	0.044
Shelf RKF	100-200FM	JAN-FEB 2002	5	-	33.796	-	33.796	-	0.076	-	0.076	-	0.062	-	0.062
Shelf RKF	100-200FM	MAR-APR 2002	2	-	369.953	-	369.953	-	2.220	-	2.220	-	1.850	-	1.850
Shelf RKF	100-200FM	MAY-JUN 2002	2	-	35.438	-	35.438	-	0.109	-	0.109	-	0.070	-	0.070
Slope RKF	100-200FM	SEP-OCT 2001	1	-	---	-	---	-	---	-	---	-	---	-	---
Slope RKF	100-200FM	NOV-DEC 2001	5	-	17.621	-	17.621	-	0.048	-	0.048	-	0.036	-	0.036
Slope RKF	100-200FM	JAN-FEB 2002	18	-	3.787	-	3.781	-	0.013	-	0.013	-	0.010	-	0.011
Slope RKF	100-200FM	MAR-APR 2002	11	-	27.137	-	27.137	-	0.016	-	0.016	-	0.016	-	0.016
Slope RKF	100-200FM	MAY-JUN 2002	8	0.301	0.301	0.301	0.301	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
Slope RKF	100-200FM	JUL-AUG 2002	3	-	120.723	-	120.723	-	0.061	-	0.061	-	0.058	-	0.058
Slope RKF	>200FM	MAY-JUN 2002	10	-	0.160	-	0.180	-	0.000	-	0.000	-	0.000	-	0.000
Slope RKF	>200FM	JUL-AUG 2002	1	-	---	-	---	-	---	-	---	-	---	-	---
Flatfish	0-100FM	SEP-OCT 2001	127	0.058	0.043	0.452	0.249	0.000	0.000	0.003	0.002	0.000	0.000	0.003	0.001
Flatfish	0-100FM	NOV-DEC 2001	35	0.022	0.015	0.022	0.015	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
Flatfish	0-100FM	JAN-FEB 2002	53	0.011	0.011	0.244	0.210	0.000	0.000	0.001	0.000	0.000	0.000	0.001	0.000
Flatfish	0-100FM	MAR-APR 2002	37	-	0.144	-	0.327	-	0.001	-	0.001	-	0.001	-	0.001
Flatfish	0-100FM	MAY-JUN 2002	7	0.135	0.135	0.764	0.451	0.002	0.002	0.010	0.006	0.001	0.001	0.007	0.004
Flatfish	100-200FM	SEP-OCT 2001	34	0.041	0.041	0.041	0.041	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
Flatfish	100-200FM	NOV-DEC 2001	6	-	11.754	-	11.754	-	0.037	-	0.037	-	0.032	-	0.032
Flatfish	100-200FM	JAN-FEB 2002	5	-	6.702	0.237	0.237	-	0.030	0.001	0.001	-	0.026	0.001	0.001

Appendix Table IV.B. Continued. **NOTE: BE ESPECIALLY CAUTIOUS WHEN INTERPRETING THE ESTIMATES THAT ARE CALCULATED WITH LESS THAN 10 TOWS**

Strategy	Depth Range	Period	Number of Tows	Discarded lbs per hr	s.e.	Bycatch lbs per hr	s.e.	Discarded lbs per lb Target Species	s.e.	Discarded lbs per lb Target Species	s.e.	Discarded lbs per lb of Groundfish	s.e.	Bycatch lbs per lb of Groundfish	s.e.
					Discarded lbs per hr		Bycatch lbs per hr	Discarded lbs per lb Target Species	Bycatch lbs per lb Target Species	Discarded lbs per lb of Groundfish	Bycatch lbs per lb of Groundfish				
Flatfish	100-200FM	MAR-APR 2002	1	11.724	---	11.724	---	0.031	---	0.031	---	0.029	---	0.029	---
Flatfish	100-200FM	JUL-AUG 2002	3	4.458	2.047	4.458	2.047	0.031	0.016	0.031	0.016	0.028	0.015	0.028	0.015
Flatfish	>200FM	SEP-OCT 2001	4	-	8.011	-	8.011	-	0.105	-	0.105	-	0.071	-	0.071
Cowcod															
DTS	0-100FM	MAR-APR 2002	2	0.838	0.213	0.838	0.213	0.002	0.002	0.002	0.002	0.002	0.001	0.002	0.001
DTS	0-100FM	MAY-JUN 2002	3	0.918	0.918	0.918	0.918	0.002	0.002	0.002	0.002	0.002	0.002	0.002	0.002
DTS	100-200FM	SEP-OCT 2001	1	-	---	-	---	-	---	-	---	-	---	-	---
DTS	100-200FM	MAR-APR 2002	4	-	8.646	-	8.646	-	0.016	-	0.016	-	0.015	-	0.015
DTS	100-200FM	MAY-JUN 2002	7	0.646	0.524	0.646	0.524	0.002	0.002	0.002	0.002	0.002	0.002	0.002	0.002
DTS	100-200FM	JUL-AUG 2002	8	-	4.645	-	4.645	-	0.012	-	0.012	-	0.010	-	0.010
DTS	>200FM	SEP-OCT 2001	4	-	55.538	-	55.538	-	0.052	-	0.052	-	0.050	-	0.050
DTS	>200FM	JAN-FEB 2002	46	-	11.090	-	11.090	-	0.041	-	0.041	-	0.040	-	0.040
DTS	>200FM	MAR-APR 2002	59	-	0.001	-	0.001	-	0.000	-	0.000	-	0.000	-	0.000
DTS	>200FM	MAY-JUN 2002	37	-	0.020	-	0.020	-	0.000	-	0.000	-	0.000	-	0.000
DTS	>200FM	JUL-AUG 2002	156	-	2.413	-	2.413	-	0.008	-	0.008	-	0.008	-	0.008
Shelf RKF	0-100FM	SEP-OCT 2001	4	-	0.099	-	0.099	-	0.001	-	0.001	-	0.001	-	0.001
Shelf RKF	0-100FM	NOV-DEC 2001	1	-	---	-	---	-	---	-	---	-	---	-	---
Shelf RKF	0-100FM	JAN-FEB 2002	3	-	796.626	-	796.626	-	1.362	-	1.362	-	0.866	-	0.866
Shelf RKF	0-100FM	MAR-APR 2002	8	0.519	0.354	0.519	0.354	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001
Shelf RKF	0-100FM	MAY-JUN 2002	6	12.669	5.100	12.669	5.100	0.008	0.004	0.008	0.004	0.007	0.003	0.007	0.003
Shelf RKF	100-200FM	SEP-OCT 2001	5	0.056	0.056	0.056	0.056	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
Shelf RKF	100-200FM	JAN-FEB 2002	5	0.073	0.073	0.073	0.073	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
Shelf RKF	100-200FM	MAR-APR 2002	2	71.033	71.033	71.033	71.033	0.426	0.426	0.426	0.426	0.355	0.355	0.355	0.355
Shelf RKF	100-200FM	MAY-JUN 2002	2	5.915	3.103	5.915	3.103	0.019	0.004	0.019	0.004	0.012	0.002	0.012	0.002
Slope RKF	100-200FM	SEP-OCT 2001	1	-	---	-	---	-	---	-	---	-	---	-	---
Slope RKF	100-200FM	NOV-DEC 2001	5	-	17.621	-	17.621	-	0.048	-	0.048	-	0.036	-	0.036
Slope RKF	100-200FM	JAN-FEB 2002	18	0.027	0.027	0.027	0.027	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
Slope RKF	100-200FM	MAR-APR 2002	11	-	27.137	-	27.137	-	0.016	-	0.016	-	0.016	-	0.016
Slope RKF	100-200FM	MAY-JUN 2002	8	2.805	2.130	2.805	2.130	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001
Slope RKF	100-200FM	JUL-AUG 2002	3	2.030	2.030	2.030	2.030	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001
Slope RKF	>200FM	MAY-JUN 2002	10	-	0.160	-	0.180	-	0.000	-	0.000	-	0.000	-	0.000
Slope RKF	>200FM	JUL-AUG 2002	1	-	---	-	---	-	---	-	---	-	---	-	---
Flatfish	0-100FM	SEP-OCT 2001	127	0.010	0.006	0.010	0.006	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
Flatfish	0-100FM	NOV-DEC 2001	35	0.477	0.268	0.477	0.268	0.004	0.002	0.004	0.002	0.004	0.002	0.004	0.002
Flatfish	0-100FM	JAN-FEB 2002	53	-	0.011	-	0.210	-	0.000	-	0.000	-	0.000	-	0.000
Flatfish	0-100FM	MAR-APR 2002	37	0.083	0.083	0.083	0.083	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
Flatfish	0-100FM	MAY-JUN 2002	7	0.078	0.078	0.078	0.078	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001
Flatfish	100-200FM	SEP-OCT 2001	34	0.104	0.030	0.104	0.030	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
Flatfish	100-200FM	NOV-DEC 2001	6	3.689	2.411	3.689	2.411	0.011	0.008	0.011	0.008	0.010	0.007	0.010	0.007
Flatfish	100-200FM	JAN-FEB 2002	5	-	6.702	-	0.237	-	0.030	-	0.001	-	0.026	-	0.001

Appendix Table IV.B. Continued. **NOTE: BE ESPECIALLY CAUTIOUS WHEN INTERPRETING THE ESTIMATES THAT ARE CALCULATED WITH LESS THAN 10 TOWS**

Strategy	Depth Range	Period	Number of Tows	Discarded lbs per hr	s.e.	Bycatch lbs per hr	s.e.	Discarded Target Species	s.e.	Bycatch Target Species	s.e.	Discarded lbs per lb of Groundfish	s.e.	Bycatch lbs per lb of Groundfish	s.e.
					Discarded lbs per hr		Bycatch lbs per hr		Discarded lbs per lb		Bycatch lbs per lb		Discarded lbs per lb of Groundfish		Bycatch lbs per lb of Groundfish
Flatfish	100-200FM	MAR-APR 2002	1	12.010	---	12.010	---	0.032	---	0.032	---	0.029	---	0.029	---
Flatfish	100-200FM	JUL-AUG 2002	3	-	2.047	-	2.047	-	0.016	-	0.016	-	0.015	-	0.015
Flatfish	>200FM	SEP-OCT 2001	4	-	8.011	-	8.011	-	0.105	-	0.105	-	0.071	-	0.071
Widow RKF															
DTS	0-100FM	MAR-APR 2002	2	-	0.213	-	0.213	-	0.002	-	0.002	-	0.001	-	0.001
DTS	0-100FM	MAY-JUN 2002	3	0.044	0.044	0.044	0.044	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
DTS	100-200FM	SEP-OCT 2001	1	-	---	-	---	-	---	-	---	-	---	-	---
DTS	100-200FM	MAR-APR 2002	4	0.182	0.182	0.182	0.182	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
DTS	100-200FM	MAY-JUN 2002	7	-	0.524	-	0.524	-	0.002	-	0.002	-	0.002	-	0.002
DTS	100-200FM	JUL-AUG 2002	8	0.320	0.320	0.320	0.320	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001
DTS	>200FM	SEP-OCT 2001	4	-	55.538	-	55.538	-	0.052	-	0.052	-	0.050	-	0.050
DTS	>200FM	JAN-FEB 2002	46	-	11.090	-	11.090	-	0.041	-	0.041	-	0.040	-	0.040
DTS	>200FM	MAR-APR 2002	59	-	0.001	-	0.001	-	0.000	-	0.000	-	0.000	-	0.000
DTS	>200FM	MAY-JUN 2002	37	-	0.020	-	0.020	-	0.000	-	0.000	-	0.000	-	0.000
DTS	>200FM	JUL-AUG 2002	156	-	2.413	-	2.413	-	0.008	-	0.008	-	0.008	-	0.008
Shelf RKF	0-100FM	SEP-OCT 2001	4	-	0.099	-	0.099	-	0.001	-	0.001	-	0.001	-	0.001
Shelf RKF	0-100FM	NOV-DEC 2001	1	-	---	-	---	-	---	-	---	-	---	-	---
Shelf RKF	0-100FM	JAN-FEB 2002	3	-	796.626	-	796.626	-	1.362	-	1.362	-	0.866	-	0.866
Shelf RKF	0-100FM	MAR-APR 2002	8	-	0.354	-	0.354	-	0.001	-	0.001	-	0.001	-	0.001
Shelf RKF	0-100FM	MAY-JUN 2002	6	-	5.100	-	5.100	-	0.004	-	0.004	-	0.003	-	0.003
Shelf RKF	100-200FM	SEP-OCT 2001	5	-	0.056	-	0.056	-	0.000	-	0.000	-	0.000	-	0.000
Shelf RKF	100-200FM	JAN-FEB 2002	5	-	0.073	-	0.073	-	0.000	-	0.000	-	0.000	-	0.000
Shelf RKF	100-200FM	MAR-APR 2002	2	8.598	8.598	8.598	8.598	0.052	0.052	0.052	0.052	0.043	0.043	0.043	0.043
Shelf RKF	100-200FM	MAY-JUN 2002	2	-	3.103	-	3.103	-	0.004	-	0.004	-	0.002	-	0.002
Slope RKF	100-200FM	SEP-OCT 2001	1	-	---	-	---	-	---	-	---	-	---	-	---
Slope RKF	100-200FM	NOV-DEC 2001	5	-	17.621	-	17.621	-	0.048	-	0.048	-	0.036	-	0.036
Slope RKF	100-200FM	JAN-FEB 2002	18	0.078	0.054	0.078	0.054	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
Slope RKF	100-200FM	MAR-APR 2002	11	1.864	1.144	1.864	1.144	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001
Slope RKF	100-200FM	MAY-JUN 2002	8	-	2.130	-	2.130	-	0.001	-	0.001	-	0.001	-	0.001
Slope RKF	100-200FM	JUL-AUG 2002	3	5.385	5.385	5.385	5.385	0.003	0.003	0.003	0.003	0.003	0.003	0.003	0.003
Slope RKF	>200FM	MAY-JUN 2002	10	-	0.160	-	0.180	-	0.000	-	0.000	-	0.000	-	0.000
Slope RKF	>200FM	JUL-AUG 2002	1	-	---	-	---	-	---	-	---	-	---	-	---
Flatfish	0-100FM	SEP-OCT 2001	127	-	0.006	0.006	0.006	-	0.000	0.000	0.000	-	0.000	0.000	0.000
Flatfish	0-100FM	NOV-DEC 2001	35	0.067	0.048	0.067	0.048	0.001	0.000	0.001	0.000	0.001	0.000	0.001	0.000
Flatfish	0-100FM	JAN-FEB 2002	53	-	0.011	-	0.210	-	0.000	-	0.000	-	0.000	-	0.000
Flatfish	0-100FM	MAR-APR 2002	37	-	0.083	-	0.083	-	0.000	-	0.000	-	0.000	-	0.000
Flatfish	0-100FM	MAY-JUN 2002	7	-	0.078	-	0.078	-	0.001	-	0.001	-	0.001	-	0.001
Flatfish	100-200FM	SEP-OCT 2001	34	-	0.030	0.013	0.013	-	0.000	0.000	0.000	-	0.000	0.000	0.000
Flatfish	100-200FM	NOV-DEC 2001	6	-	2.411	1.614	1.044	-	0.008	0.005	0.003	-	0.007	0.004	0.003
Flatfish	100-200FM	JAN-FEB 2002	5	-	6.702	0.271	0.271	-	0.030	0.001	0.001	-	0.026	0.001	0.001

Appendix Table IV.B. Continued. **NOTE: BE ESPECIALLY CAUTIOUS WHEN INTERPRETING THE ESTIMATES THAT ARE CALCULATED WITH LESS THAN 10 TOWS**

Strategy	Depth Range	Period	Number of Tows	Discarded lbs per hr	s.e.	Bycatch lbs per hr	s.e.	Discarded Target Species	s.e.	Discarded Target Species	s.e.	Discarded lbs per lb of Groundfish	s.e.	Bycatch lbs per lb of Groundfish	s.e.
					Discarded lbs per hr		Bycatch lbs per hr		Discarded lbs per lb		Bycatch lbs per lb				
Flatfish	100-200FM	MAR-APR 2002	1	9.150	---	9.150	---	0.024	---	0.024	---	0.022	---	0.022	---
Flatfish	100-200FM	JUL-AUG 2002	3	1.212	0.371	1.212	0.371	0.008	0.003	0.008	0.003	0.008	0.003	0.008	0.003
Flatfish	>200FM	SEP-OCT 2001	4	-	8.011	-	8.011	-	0.105	-	0.105	-	0.071	-	0.071
Yellowtail RKF															
DTS	0-100FM	MAR-APR 2002	2	-	0.213	-	0.213	-	0.002	-	0.002	-	0.001	-	0.001
DTS	0-100FM	MAY-JUN 2002	3	-	0.044	-	0.044	-	0.000	-	0.000	-	0.000	-	0.000
DTS	100-200FM	SEP-OCT 2001	1	-	---	-	---	-	---	-	---	-	---	-	---
DTS	100-200FM	MAR-APR 2002	4	-	0.182	-	0.182	-	0.000	-	0.000	-	0.000	-	0.000
DTS	100-200FM	MAY-JUN 2002	7	-	0.524	-	0.524	-	0.002	-	0.002	-	0.002	-	0.002
DTS	100-200FM	JUL-AUG 2002	8	-	0.320	-	0.320	-	0.001	-	0.001	-	0.001	-	0.001
DTS	>200FM	SEP-OCT 2001	4	-	55.538	-	55.538	-	0.052	-	0.052	-	0.050	-	0.050
DTS	>200FM	JAN-FEB 2002	46	-	11.090	-	11.090	-	0.041	-	0.041	-	0.040	-	0.040
DTS	>200FM	MAR-APR 2002	59	-	0.001	-	0.001	-	0.000	-	0.000	-	0.000	-	0.000
DTS	>200FM	MAY-JUN 2002	37	-	0.020	-	0.020	-	0.000	-	0.000	-	0.000	-	0.000
DTS	>200FM	JUL-AUG 2002	156	-	2.413	-	2.413	-	0.008	-	0.008	-	0.008	-	0.008
Shelf RKF	0-100FM	SEP-OCT 2001	4	-	0.099	-	0.099	-	0.001	-	0.001	-	0.001	-	0.001
Shelf RKF	0-100FM	NOV-DEC 2001	1	-	---	-	---	-	---	-	---	-	---	-	---
Shelf RKF	0-100FM	JAN-FEB 2002	3	-	796.626	-	796.626	-	1.362	-	1.362	-	0.866	-	0.866
Shelf RKF	0-100FM	MAR-APR 2002	8	-	0.354	-	0.354	-	0.001	-	0.001	-	0.001	-	0.001
Shelf RKF	0-100FM	MAY-JUN 2002	6	-	5.100	-	5.100	-	0.004	-	0.004	-	0.003	-	0.003
Shelf RKF	100-200FM	SEP-OCT 2001	5	-	0.056	-	0.056	-	0.000	-	0.000	-	0.000	-	0.000
Shelf RKF	100-200FM	JAN-FEB 2002	5	-	0.073	-	0.073	-	0.000	-	0.000	-	0.000	-	0.000
Shelf RKF	100-200FM	MAR-APR 2002	2	-	8.598	-	8.598	-	0.052	-	0.052	-	0.043	-	0.043
Shelf RKF	100-200FM	MAY-JUN 2002	2	-	3.103	-	3.103	-	0.004	-	0.004	-	0.002	-	0.002
Slope RKF	100-200FM	SEP-OCT 2001	1	-	---	-	---	-	---	-	---	-	---	-	---
Slope RKF	100-200FM	NOV-DEC 2001	5	-	17.621	-	17.621	-	0.048	-	0.048	-	0.036	-	0.036
Slope RKF	100-200FM	JAN-FEB 2002	18	-	0.054	-	0.054	-	0.000	-	0.000	-	0.000	-	0.000
Slope RKF	100-200FM	MAR-APR 2002	11	-	1.144	-	1.144	-	0.001	-	0.001	-	0.001	-	0.001
Slope RKF	100-200FM	MAY-JUN 2002	8	-	2.130	-	2.130	-	0.001	-	0.001	-	0.001	-	0.001
Slope RKF	100-200FM	JUL-AUG 2002	3	-	5.385	-	5.385	-	0.003	-	0.003	-	0.003	-	0.003
Slope RKF	>200FM	MAY-JUN 2002	10	-	0.160	-	0.180	-	0.000	-	0.000	-	0.000	-	0.000
Slope RKF	>200FM	JUL-AUG 2002	1	-	---	-	---	-	---	-	---	-	---	-	---
Flatfish	0-100FM	SEP-OCT 2001	127	-	0.006	-	0.006	-	0.000	-	0.000	-	0.000	-	0.000
Flatfish	0-100FM	NOV-DEC 2001	35	-	0.048	-	0.048	-	0.000	-	0.000	-	0.000	-	0.000
Flatfish	0-100FM	JAN-FEB 2002	53	0.013	0.013	0.227	0.147	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
Flatfish	0-100FM	MAR-APR 2002	37	-	0.083	-	0.083	-	0.000	-	0.000	-	0.000	-	0.000
Flatfish	0-100FM	MAY-JUN 2002	7	-	0.078	-	0.078	-	0.001	-	0.001	-	0.001	-	0.001
Flatfish	100-200FM	SEP-OCT 2001	34	-	0.030	-	0.013	-	0.000	-	0.000	-	0.000	-	0.000
Flatfish	100-200FM	NOV-DEC 2001	6	-	2.411	-	1.044	-	0.008	-	0.003	-	0.007	-	0.003
Flatfish	100-200FM	JAN-FEB 2002	5	-	6.702	-	0.271	-	0.030	-	0.001	-	0.026	-	0.001

Appendix Table IV.B. Continued. **NOTE: BE ESPECIALLY CAUTIOUS WHEN INTERPRETING THE ESTIMATES THAT ARE CALCULATED WITH LESS THAN 10 TOWS**

Strategy	Depth Range	Period	Number of Tows	Discarded lbs per hr	s.e.	Bycatch lbs per hr	s.e.	Discarded lbs per lb Target Species	s.e.	Discarded lbs per lb Target Species	s.e.	Discarded lbs per lb of Groundfish	s.e.	Bycatch lbs per lb of Groundfish	s.e.
					Discarded lbs per hr		Bycatch lbs per hr	Discarded lbs per lb Target Species	Bycatch lbs per lb Target Species	Discarded lbs per lb of Groundfish	Bycatch lbs per lb of Groundfish				
Flatfish	100-200FM	MAR-APR 2002	1	-	---	-	---	-	---	-	---	-	---	-	---
Flatfish	100-200FM	JUL-AUG 2002	3	-	0.371	-	0.371	-	0.003	-	0.003	-	0.003	-	0.003
Flatfish	>200FM	SEP-OCT 2001	4	-	8.011	-	8.011	-	0.105	-	0.105	-	0.071	-	0.071
Yelloweye RKF															
DTS	0-100FM	MAR-APR 2002	2	-	0.213	-	0.213	-	0.002	-	0.002	-	0.001	-	0.001
DTS	0-100FM	MAY-JUN 2002	3	-	0.044	-	0.044	-	0.000	-	0.000	-	0.000	-	0.000
DTS	100-200FM	SEP-OCT 2001	1	-	---	-	---	-	---	-	---	-	---	-	---
DTS	100-200FM	MAR-APR 2002	4	-	0.182	-	0.182	-	0.000	-	0.000	-	0.000	-	0.000
DTS	100-200FM	MAY-JUN 2002	7	-	0.524	-	0.524	-	0.002	-	0.002	-	0.002	-	0.002
DTS	100-200FM	JUL-AUG 2002	8	-	0.320	-	0.320	-	0.001	-	0.001	-	0.001	-	0.001
DTS	>200FM	SEP-OCT 2001	4	-	55.538	-	55.538	-	0.052	-	0.052	-	0.050	-	0.050
DTS	>200FM	JAN-FEB 2002	46	-	11.090	-	11.090	-	0.041	-	0.041	-	0.040	-	0.040
DTS	>200FM	MAR-APR 2002	59	-	0.001	-	0.001	-	0.000	-	0.000	-	0.000	-	0.000
DTS	>200FM	MAY-JUN 2002	37	-	0.020	-	0.020	-	0.000	-	0.000	-	0.000	-	0.000
DTS	>200FM	JUL-AUG 2002	156	-	2.413	-	2.413	-	0.008	-	0.008	-	0.008	-	0.008
Shelf RKF	0-100FM	SEP-OCT 2001	4	-	0.099	-	0.099	-	0.001	-	0.001	-	0.001	-	0.001
Shelf RKF	0-100FM	NOV-DEC 2001	1	-	---	-	---	-	---	-	---	-	---	-	---
Shelf RKF	0-100FM	JAN-FEB 2002	3	-	796.626	-	796.626	-	1.362	-	1.362	-	0.866	-	0.866
Shelf RKF	0-100FM	MAR-APR 2002	8	-	0.354	-	0.354	-	0.001	-	0.001	-	0.001	-	0.001
Shelf RKF	0-100FM	MAY-JUN 2002	6	-	5.100	-	5.100	-	0.004	-	0.004	-	0.003	-	0.003
Shelf RKF	100-200FM	SEP-OCT 2001	5	-	0.056	-	0.056	-	0.000	-	0.000	-	0.000	-	0.000
Shelf RKF	100-200FM	JAN-FEB 2002	5	-	0.073	-	0.073	-	0.000	-	0.000	-	0.000	-	0.000
Shelf RKF	100-200FM	MAR-APR 2002	2	-	8.598	-	8.598	-	0.052	-	0.052	-	0.043	-	0.043
Shelf RKF	100-200FM	MAY-JUN 2002	2	0.217	0.217	0.217	0.217	0.001	0.001	0.001	0.001	0.000	0.000	0.000	0.000
Slope RKF	100-200FM	SEP-OCT 2001	1	-	---	-	---	-	---	-	---	-	---	-	---
Slope RKF	100-200FM	NOV-DEC 2001	5	-	17.621	-	17.621	-	0.048	-	0.048	-	0.036	-	0.036
Slope RKF	100-200FM	JAN-FEB 2002	18	-	0.054	-	0.054	-	0.000	-	0.000	-	0.000	-	0.000
Slope RKF	100-200FM	MAR-APR 2002	11	-	1.144	-	1.144	-	0.001	-	0.001	-	0.001	-	0.001
Slope RKF	100-200FM	MAY-JUN 2002	8	1.548	1.548	1.548	1.548	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001
Slope RKF	100-200FM	JUL-AUG 2002	3	-	5.385	-	5.385	-	0.003	-	0.003	-	0.003	-	0.003
Slope RKF	>200FM	MAY-JUN 2002	10	-	0.160	-	0.180	-	0.000	-	0.000	-	0.000	-	0.000
Slope RKF	>200FM	JUL-AUG 2002	1	-	---	-	---	-	---	-	---	-	---	-	---
Flatfish	0-100FM	SEP-OCT 2001	127	-	0.006	-	0.006	-	0.000	-	0.000	-	0.000	-	0.000
Flatfish	0-100FM	NOV-DEC 2001	35	-	0.048	0.127	0.127	-	0.000	0.001	0.001	-	0.000	0.001	0.001
Flatfish	0-100FM	JAN-FEB 2002	53	-	0.013	-	0.147	-	0.000	-	0.000	-	0.000	-	0.000
Flatfish	0-100FM	MAR-APR 2002	37	-	0.083	-	0.083	-	0.000	-	0.000	-	0.000	-	0.000
Flatfish	0-100FM	MAY-JUN 2002	7	-	0.078	-	0.078	-	0.001	-	0.001	-	0.001	-	0.001
Flatfish	100-200FM	SEP-OCT 2001	34	-	0.030	-	0.013	-	0.000	-	0.000	-	0.000	-	0.000
Flatfish	100-200FM	NOV-DEC 2001	6	-	2.411	-	1.044	-	0.008	-	0.003	-	0.007	-	0.003
Flatfish	100-200FM	JAN-FEB 2002	5	-	6.702	-	0.271	-	0.030	-	0.001	-	0.026	-	0.001

Appendix Table IV.B. Continued. **NOTE: BE ESPECIALLY CAUTIOUS WHEN INTERPRETING THE ESTIMATES THAT ARE CALCULATED WITH LESS THAN 10 TOWS**

Strategy	Depth Range	Period	Number of Tows	Discarded lbs per hr	s.e.	Bycatch lbs per hr	s.e.	Discarded lbs per lb Target Species	s.e.	Bycatch lbs per lb Target Species	s.e.	Discarded lbs per lb of Groundfish	s.e.	Bycatch lbs per lb of Groundfish	s.e.
					Discarded lbs per hr		Bycatch lbs per hr		Discarded lbs per lb		Bycatch lbs per lb		Discarded lbs per lb of Groundfish		Bycatch lbs per lb of Groundfish
Flatfish	100-200FM	MAR-APR 2002	1	5.433	---	5.433	---	0.014	---	0.014	---	0.013	---	0.013	---
Flatfish	100-200FM	JUL-AUG 2002	3	0.948	0.505	0.948	0.505	0.007	0.004	0.007	0.004	0.006	0.003	0.006	0.003
Flatfish	>200FM	SEP-OCT 2001	4	-	8.011	-	8.011	-	0.105	-	0.105	-	0.071	-	0.071
Darkblotched RKF															
DTS	0-100FM	MAR-APR 2002	2	-	0.213	-	0.213	-	0.002	-	0.002	-	0.001	-	0.001
DTS	0-100FM	MAY-JUN 2002	3	3.379	2.186	3.379	2.186	0.009	0.006	0.009	0.006	0.006	0.004	0.006	0.004
DTS	100-200FM	SEP-OCT 2001	1	-	---	-	---	-	---	-	---	-	---	-	---
DTS	100-200FM	MAR-APR 2002	4	0.044	0.044	0.044	0.044	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
DTS	100-200FM	MAY-JUN 2002	7	0.060	0.060	8.121	3.191	0.000	0.000	0.031	0.023	0.000	0.000	0.026	0.017
DTS	100-200FM	JUL-AUG 2002	8	1.681	1.681	2.951	1.988	0.005	0.005	0.008	0.005	0.004	0.004	0.007	0.004
DTS	>200FM	SEP-OCT 2001	4	-	55.538	-	55.538	-	0.052	-	0.052	-	0.050	-	0.050
DTS	>200FM	JAN-FEB 2002	46	-	11.090	-	11.090	-	0.041	-	0.041	-	0.040	-	0.040
DTS	>200FM	MAR-APR 2002	59	0.002	0.002	0.002	0.002	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
DTS	>200FM	MAY-JUN 2002	37	0.008	0.008	0.107	0.098	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
DTS	>200FM	JUL-AUG 2002	156	0.016	0.012	0.017	0.012	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
Shelf RKF	0-100FM	SEP-OCT 2001	4	-	0.099	-	0.099	-	0.001	-	0.001	-	0.001	-	0.001
Shelf RKF	0-100FM	NOV-DEC 2001	1	-	---	-	---	-	---	-	---	-	---	-	---
Shelf RKF	0-100FM	JAN-FEB 2002	3	-	796.626	-	796.626	-	1.362	-	1.362	-	0.866	-	0.866
Shelf RKF	0-100FM	MAR-APR 2002	8	0.035	0.035	0.035	0.035	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
Shelf RKF	0-100FM	MAY-JUN 2002	6	4.213	4.213	5.407	4.214	0.003	0.003	0.003	0.003	0.002	0.002	0.003	0.002
Shelf RKF	100-200FM	SEP-OCT 2001	5	-	0.056	0.106	0.106	-	0.000	0.001	0.001	-	0.000	0.000	0.000
Shelf RKF	100-200FM	JAN-FEB 2002	5	-	0.073	-	0.073	-	0.000	-	0.000	-	0.000	-	0.000
Shelf RKF	100-200FM	MAR-APR 2002	2	-	8.598	-	8.598	-	0.052	-	0.052	-	0.043	-	0.043
Shelf RKF	100-200FM	MAY-JUN 2002	2	2.211	2.211	2.211	2.211	0.007	0.007	0.007	0.007	0.005	0.005	0.005	0.005
Slope RKF	100-200FM	SEP-OCT 2001	1	-	---	-	---	-	---	-	---	-	---	-	---
Slope RKF	100-200FM	NOV-DEC 2001	5	-	17.621	-	17.621	-	0.048	-	0.048	-	0.036	-	0.036
Slope RKF	100-200FM	JAN-FEB 2002	18	2.747	0.813	2.747	0.813	0.009	0.004	0.009	0.004	0.007	0.003	0.007	0.003
Slope RKF	100-200FM	MAR-APR 2002	11	0.561	0.561	0.561	0.561	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
Slope RKF	100-200FM	MAY-JUN 2002	8	0.500	0.344	0.500	0.344	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
Slope RKF	100-200FM	JUL-AUG 2002	3	-	5.385	-	5.385	-	0.003	-	0.003	-	0.003	-	0.003
Slope RKF	>200FM	MAY-JUN 2002	10	0.040	0.040	0.040	0.040	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
Slope RKF	>200FM	JUL-AUG 2002	1	-	---	-	---	-	---	-	---	-	---	-	---
Flatfish	0-100FM	SEP-OCT 2001	127	0.042	0.042	0.042	0.042	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
Flatfish	0-100FM	NOV-DEC 2001	35	0.094	0.071	0.094	0.071	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001
Flatfish	0-100FM	JAN-FEB 2002	53	-	0.013	-	0.147	-	0.000	-	0.000	-	0.000	-	0.000
Flatfish	0-100FM	MAR-APR 2002	37	-	0.083	-	0.083	-	0.000	-	0.000	-	0.000	-	0.000
Flatfish	0-100FM	MAY-JUN 2002	7	0.100	0.100	0.100	0.100	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001
Flatfish	100-200FM	SEP-OCT 2001	34	0.095	0.092	0.096	0.092	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
Flatfish	100-200FM	NOV-DEC 2001	6	-	2.411	-	1.044	-	0.008	-	0.003	-	0.007	-	0.003
Flatfish	100-200FM	JAN-FEB 2002	5	4.377	2.781	4.377	2.781	0.014	0.010	0.014	0.010	0.013	0.009	0.013	0.009

Appendix Table IV.B. Continued. **NOTE: BE ESPECIALLY CAUTIOUS WHEN INTERPRETING THE ESTIMATES THAT ARE CALCULATED WITH LESS THAN 10 TOWS**

Strategy	Depth Range	Period	Number of Tows	Discarded lbs per hr	s.e.	Bycatch lbs per hr	s.e.	Discarded Target Species	s.e.	Bycatch Target Species	s.e.	Discarded lbs per lb of Groundfish	s.e.	Bycatch lbs per lb of Groundfish	s.e.
					Discarded lbs per hr		Bycatch lbs per hr		Discarded lbs per lb		Bycatch lbs per lb				
Flatfish	100-200FM	MAR-APR 2002	1	9.436	---	20.725	---	0.025	---	0.055	---	0.023	---	0.051	---
Flatfish	100-200FM	JUL-AUG 2002	3	-	0.505	-	0.505	-	0.004	-	0.004	-	0.003	-	0.003
Flatfish	>200FM	SEP-OCT 2001	4	-	8.011	-	8.011	-	0.105	-	0.105	-	0.071	-	0.071
POP															
DTS	0-100FM	MAR-APR 2002	2	-	0.213	-	0.213	-	0.002	-	0.002	-	0.001	-	0.001
DTS	0-100FM	MAY-JUN 2002	3	-	2.186	-	2.186	-	0.006	-	0.006	-	0.004	-	0.004
DTS	100-200FM	SEP-OCT 2001	1	-	---	-	---	-	---	-	---	-	---	-	---
DTS	100-200FM	MAR-APR 2002	4	-	0.044	-	0.044	-	0.000	-	0.000	-	0.000	-	0.000
DTS	100-200FM	MAY-JUN 2002	7	-	0.060	0.031	0.031	-	0.000	0.000	0.000	-	0.000	0.000	0.000
DTS	100-200FM	JUL-AUG 2002	8	-	1.681	0.116	0.116	-	0.005	0.000	0.000	-	0.004	0.000	0.000
DTS	>200FM	SEP-OCT 2001	4	-	55.538	-	55.538	-	0.052	-	0.052	-	0.050	-	0.050
DTS	>200FM	JAN-FEB 2002	46	-	11.090	-	11.090	-	0.041	-	0.041	-	0.040	-	0.040
DTS	>200FM	MAR-APR 2002	59	-	0.002	-	0.002	-	0.000	-	0.000	-	0.000	-	0.000
DTS	>200FM	MAY-JUN 2002	37	-	0.008	-	0.098	-	0.000	-	0.000	-	0.000	-	0.000
DTS	>200FM	JUL-AUG 2002	156	0.002	0.002	0.007	0.003	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
Shelf RKF	0-100FM	SEP-OCT 2001	4	-	0.099	-	0.099	-	0.001	-	0.001	-	0.001	-	0.001
Shelf RKF	0-100FM	NOV-DEC 2001	1	-	---	-	---	-	---	-	---	-	---	-	---
Shelf RKF	0-100FM	JAN-FEB 2002	3	-	796.626	-	796.626	-	1.362	-	1.362	-	0.866	-	0.866
Shelf RKF	0-100FM	MAR-APR 2002	8	-	0.035	-	0.035	-	0.000	-	0.000	-	0.000	-	0.000
Shelf RKF	0-100FM	MAY-JUN 2002	6	-	4.213	-	4.214	-	0.003	-	0.003	-	0.002	-	0.002
Shelf RKF	100-200FM	SEP-OCT 2001	5	-	0.056	-	0.106	-	0.000	-	0.001	-	0.000	-	0.000
Shelf RKF	100-200FM	JAN-FEB 2002	5	-	0.073	-	0.073	-	0.000	-	0.000	-	0.000	-	0.000
Shelf RKF	100-200FM	MAR-APR 2002	2	-	8.598	-	8.598	-	0.052	-	0.052	-	0.043	-	0.043
Shelf RKF	100-200FM	MAY-JUN 2002	2	-	2.211	-	2.211	-	0.007	-	0.007	-	0.005	-	0.005
Slope RKF	100-200FM	SEP-OCT 2001	1	-	---	-	---	-	---	-	---	-	---	-	---
Slope RKF	100-200FM	NOV-DEC 2001	5	-	17.621	-	17.621	-	0.048	-	0.048	-	0.036	-	0.036
Slope RKF	100-200FM	JAN-FEB 2002	18	-	0.813	-	0.813	-	0.004	-	0.004	-	0.003	-	0.003
Slope RKF	100-200FM	MAR-APR 2002	11	-	0.561	-	0.561	-	0.000	-	0.000	-	0.000	-	0.000
Slope RKF	100-200FM	MAY-JUN 2002	8	3.686	3.686	3.686	3.686	0.002	0.002	0.002	0.002	0.002	0.002	0.002	0.002
Slope RKF	100-200FM	JUL-AUG 2002	3	-	5.385	-	5.385	-	0.003	-	0.003	-	0.003	-	0.003
Slope RKF	>200FM	MAY-JUN 2002	10	-	0.040	-	0.040	-	0.000	-	0.000	-	0.000	-	0.000
Slope RKF	>200FM	JUL-AUG 2002	1	-	---	-	---	-	---	-	---	-	---	-	---
Flatfish	0-100FM	SEP-OCT 2001	127	-	0.042	-	0.042	-	0.000	-	0.000	-	0.000	-	0.000
Flatfish	0-100FM	NOV-DEC 2001	35	-	0.071	-	0.071	-	0.001	-	0.001	-	0.001	-	0.001
Flatfish	0-100FM	JAN-FEB 2002	53	-	0.013	-	0.147	-	0.000	-	0.000	-	0.000	-	0.000
Flatfish	0-100FM	MAR-APR 2002	37	-	0.083	-	0.083	-	0.000	-	0.000	-	0.000	-	0.000
Flatfish	0-100FM	MAY-JUN 2002	7	-	0.100	-	0.100	-	0.001	-	0.001	-	0.001	-	0.001
Flatfish	100-200FM	SEP-OCT 2001	34	-	0.092	-	0.092	-	0.000	-	0.000	-	0.000	-	0.000
Flatfish	100-200FM	NOV-DEC 2001	6	-	2.411	-	1.044	-	0.008	-	0.003	-	0.007	-	0.003
Flatfish	100-200FM	JAN-FEB 2002	5	-	2.781	-	2.781	-	0.010	-	0.010	-	0.009	-	0.009

Appendix Table IV.B. Continued. **NOTE: BE ESPECIALLY CAUTIOUS WHEN INTERPRETING THE ESTIMATES THAT ARE CALCULATED WITH LESS THAN 10 TOWS**

Strategy	Depth Range	Period	Number of Tows	Discarded lbs per hr	s.e.	Bycatch lbs per hr	s.e.	Discarded lbs per lb Target Species	s.e.	Discarded lbs per lb Target Species	s.e.	Discarded lbs per lb of Groundfish	s.e.	Bycatch lbs per lb of Groundfish	s.e.
					Discarded lbs per hr		Bycatch lbs per hr	Discarded lbs per lb Target Species	Bycatch lbs per lb Target Species	Discarded lbs per lb of Groundfish	Bycatch lbs per lb of Groundfish				
Flatfish	100-200FM	MAR-APR 2002	1	-	---	-	---	-	---	-	---	-	---	-	---
Flatfish	100-200FM	JUL-AUG 2002	3	-	0.505	-	0.505	-	0.004	-	0.004	-	0.003	-	0.003
Flatfish	>200FM	SEP-OCT 2001	4	-	8.011	-	8.011	-	0.105	-	0.105	-	0.071	-	0.071
Splitnose RKF															
DTS	0-100FM	MAR-APR 2002	2	-	0.213	-	0.213	-	0.002	-	0.002	-	0.001	-	0.001
DTS	0-100FM	MAY-JUN 2002	3	1.841	1.582	7.580	7.316	0.005	0.004	0.019	0.019	0.003	0.003	0.013	0.012
DTS	100-200FM	SEP-OCT 2001	1	480.539	---	531.886	---	3.219	---	3.563	---	1.507	---	1.668	---
DTS	100-200FM	MAR-APR 2002	4	10.937	10.937	12.198	10.804	0.017	0.017	0.019	0.018	0.016	0.016	0.018	0.016
DTS	100-200FM	MAY-JUN 2002	7	4.019	3.268	4.423	3.211	0.015	0.014	0.017	0.015	0.013	0.011	0.014	0.012
DTS	100-200FM	JUL-AUG 2002	8	16.069	16.004	25.237	15.926	0.043	0.043	0.068	0.044	0.036	0.036	0.057	0.036
DTS	>200FM	SEP-OCT 2001	4	-	55.538	-	55.538	-	0.052	-	0.052	-	0.050	-	0.050
DTS	>200FM	JAN-FEB 2002	46	0.179	0.176	0.253	0.187	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001
DTS	>200FM	MAR-APR 2002	59	1.251	0.964	2.451	1.036	0.003	0.002	0.006	0.002	0.003	0.002	0.005	0.002
DTS	>200FM	MAY-JUN 2002	37	0.026	0.020	1.031	0.951	0.000	0.000	0.002	0.002	0.000	0.000	0.002	0.002
DTS	>200FM	JUL-AUG 2002	156	0.019	0.013	0.100	0.069	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
Shelf RKF	0-100FM	SEP-OCT 2001	4	-	0.099	-	0.099	-	0.001	-	0.001	-	0.001	-	0.001
Shelf RKF	0-100FM	NOV-DEC 2001	1	-	---	-	---	-	---	-	---	-	---	-	---
Shelf RKF	0-100FM	JAN-FEB 2002	3	17.293	11.225	17.293	11.225	0.029	0.019	0.029	0.019	0.018	0.012	0.018	0.012
Shelf RKF	0-100FM	MAR-APR 2002	8	-	0.035	-	0.035	-	0.000	-	0.000	-	0.000	-	0.000
Shelf RKF	0-100FM	MAY-JUN 2002	6	32.765	30.433	32.765	30.433	0.021	0.019	0.021	0.019	0.018	0.017	0.018	0.017
Shelf RKF	100-200FM	SEP-OCT 2001	5	6.277	6.277	7.888	6.879	0.037	0.037	0.047	0.043	0.026	0.026	0.033	0.030
Shelf RKF	100-200FM	JAN-FEB 2002	5	16.832	7.202	18.288	7.426	0.036	0.016	0.039	0.017	0.029	0.013	0.031	0.014
Shelf RKF	100-200FM	MAR-APR 2002	2	7.828	6.163	11.202	7.811	0.047	0.042	0.067	0.057	0.039	0.034	0.056	0.047
Shelf RKF	100-200FM	MAY-JUN 2002	2	3.976	3.976	12.309	12.309	0.013	0.013	0.039	0.039	0.008	0.008	0.025	0.025
Slope RKF	100-200FM	SEP-OCT 2001	1	-	---	-	---	-	---	-	---	-	---	-	---
Slope RKF	100-200FM	NOV-DEC 2001	5	11.251	4.646	11.251	4.646	0.029	0.012	0.029	0.012	0.023	0.009	0.023	0.009
Slope RKF	100-200FM	JAN-FEB 2002	18	11.931	4.078	11.931	4.078	0.038	0.017	0.038	0.017	0.032	0.013	0.032	0.013
Slope RKF	100-200FM	MAR-APR 2002	11	214.586	74.042	214.586	74.042	0.115	0.067	0.115	0.067	0.114	0.067	0.114	0.067
Slope RKF	100-200FM	MAY-JUN 2002	8	153.066	67.306	153.066	67.306	0.070	0.047	0.070	0.047	0.067	0.044	0.067	0.044
Slope RKF	100-200FM	JUL-AUG 2002	3	8.512	5.537	8.512	5.537	0.004	0.004	0.004	0.004	0.004	0.004	0.004	0.004
Slope RKF	>200FM	MAY-JUN 2002	10	12.125	7.908	12.125	7.908	0.007	0.005	0.007	0.005	0.006	0.005	0.006	0.005
Slope RKF	>200FM	JUL-AUG 2002	1	-	---	-	---	-	---	-	---	-	---	-	---
Flatfish	0-100FM	SEP-OCT 2001	127	-	0.042	-	0.042	-	0.000	-	0.000	-	0.000	-	0.000
Flatfish	0-100FM	NOV-DEC 2001	35	-	0.071	-	0.071	-	0.001	-	0.001	-	0.001	-	0.001
Flatfish	0-100FM	JAN-FEB 2002	53	0.226	0.197	0.226	0.197	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
Flatfish	0-100FM	MAR-APR 2002	37	0.040	0.030	0.040	0.030	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
Flatfish	0-100FM	MAY-JUN 2002	7	-	0.100	-	0.100	-	0.001	-	0.001	-	0.001	-	0.001
Flatfish	100-200FM	SEP-OCT 2001	34	1.389	0.408	1.392	0.408	0.004	0.001	0.004	0.001	0.004	0.001	0.004	0.001
Flatfish	100-200FM	NOV-DEC 2001	6	3.518	2.424	43.861	19.349	0.010	0.008	0.130	0.073	0.009	0.007	0.114	0.060
Flatfish	100-200FM	JAN-FEB 2002	5	23.086	15.420	23.280	15.606	0.076	0.054	0.077	0.054	0.069	0.049	0.070	0.049

Appendix Table IV.B. Continued. **NOTE: BE ESPECIALLY CAUTIOUS WHEN INTERPRETING THE ESTIMATES THAT ARE CALCULATED WITH LESS THAN 10 TOWS**

					s.e.			s.e.	Discarded	Discarded	Bycatch	s.e.	Discarded		s.e.	Bycatch	s.e.
	Depth	Period	Number	Discarded	Discarded	Bycatch	s.e.	lbs per lb	lbs per lb	lbs per lb	lbs per lb	Discarded	lbs per lb of	Discarded	lbs per lb of	Bycatch	s.e.
Strategy	Range	Period	of Tows	lbs per hr	lbs per hr	lbs per hr	lbs per hr	Target	Target	Target	Target	Groundfish	Groundfish	Groundfish	Groundfish	Groundfish	Groundfish
Flatfish	100-200FM	MAR-APR 2002	1	17.443	---	23.621	---	0.046	---	0.063	---	0.043	---	0.058	---		
Flatfish	100-200FM	JUL-AUG 2002	3	0.276	0.168	0.276	0.168	0.002	0.001	0.002	0.001	0.002	0.001	0.002	0.001		
Flatfish	>200FM	SEP-OCT 2001	4	-	8.011	1.809	0.879	-	0.105	0.024	0.012	-	0.071	0.016	0.008		
Black RKF																	
DTS	0-100FM	MAR-APR 2002	2	-	0.213	-	0.213	-	0.002	-	0.002	-	0.001	-	0.001		
DTS	0-100FM	MAY-JUN 2002	3	-	1.582	-	7.316	-	0.004	-	0.019	-	0.003	-	0.012		
DTS	100-200FM	SEP-OCT 2001	1	-	---	-	---	-	---	-	---	-	---	-	---		
DTS	100-200FM	MAR-APR 2002	4	-	10.937	-	10.804	-	0.017	-	0.018	-	0.016	-	0.016		
DTS	100-200FM	MAY-JUN 2002	7	-	3.268	-	3.211	-	0.014	-	0.015	-	0.011	-	0.012		
DTS	100-200FM	JUL-AUG 2002	8	-	16.004	-	15.926	-	0.043	-	0.044	-	0.036	-	0.036		
DTS	>200FM	SEP-OCT 2001	4	-	55.538	-	55.538	-	0.052	-	0.052	-	0.050	-	0.050		
DTS	>200FM	JAN-FEB 2002	46	-	0.176	-	0.187	-	0.001	-	0.001	-	0.001	-	0.001		
DTS	>200FM	MAR-APR 2002	59	-	0.964	-	1.036	-	0.002	-	0.002	-	0.002	-	0.002		
DTS	>200FM	MAY-JUN 2002	37	-	0.020	-	0.951	-	0.000	-	0.002	-	0.000	-	0.002		
DTS	>200FM	JUL-AUG 2002	156	-	0.013	-	0.069	-	0.000	-	0.000	-	0.000	-	0.000		
Shelf RKF	0-100FM	SEP-OCT 2001	4	-	0.099	-	0.099	-	0.001	-	0.001	-	0.001	-	0.001		
Shelf RKF	0-100FM	NOV-DEC 2001	1	-	---	-	---	-	---	-	---	-	---	-	---		
Shelf RKF	0-100FM	JAN-FEB 2002	3	-	11.225	-	11.225	-	0.019	-	0.019	-	0.012	-	0.012		
Shelf RKF	0-100FM	MAR-APR 2002	8	-	0.035	-	0.035	-	0.000	-	0.000	-	0.000	-	0.000		
Shelf RKF	0-100FM	MAY-JUN 2002	6	-	30.433	-	30.433	-	0.019	-	0.019	-	0.017	-	0.017		
Shelf RKF	100-200FM	SEP-OCT 2001	5	-	6.277	-	6.879	-	0.037	-	0.043	-	0.026	-	0.030		
Shelf RKF	100-200FM	JAN-FEB 2002	5	-	7.202	-	7.426	-	0.016	-	0.017	-	0.013	-	0.014		
Shelf RKF	100-200FM	MAR-APR 2002	2	-	6.163	-	7.811	-	0.042	-	0.057	-	0.034	-	0.047		
Shelf RKF	100-200FM	MAY-JUN 2002	2	-	3.976	-	12.309	-	0.013	-	0.039	-	0.008	-	0.025		
Slope RKF	100-200FM	SEP-OCT 2001	1	-	---	-	---	-	---	-	---	-	---	-	---		
Slope RKF	100-200FM	NOV-DEC 2001	5	-	4.646	-	4.646	-	0.012	-	0.012	-	0.009	-	0.009		
Slope RKF	100-200FM	JAN-FEB 2002	18	-	4.078	-	4.078	-	0.017	-	0.017	-	0.013	-	0.013		
Slope RKF	100-200FM	MAR-APR 2002	11	-	74.042	-	74.042	-	0.067	-	0.067	-	0.067	-	0.067		
Slope RKF	100-200FM	MAY-JUN 2002	8	-	67.306	-	67.306	-	0.047	-	0.047	-	0.044	-	0.044		
Slope RKF	100-200FM	JUL-AUG 2002	3	-	5.537	-	5.537	-	0.004	-	0.004	-	0.004	-	0.004		
Slope RKF	>200FM	MAY-JUN 2002	10	-	7.908	-	7.908	-	0.005	-	0.005	-	0.005	-	0.005		
Slope RKF	>200FM	JUL-AUG 2002	1	-	---	-	---	-	---	-	---	-	---	-	---		
Flatfish	0-100FM	SEP-OCT 2001	127	-	0.042	-	0.042	-	0.000	-	0.000	-	0.000	-	0.000		
Flatfish	0-100FM	NOV-DEC 2001	35	-	0.071	-	0.071	-	0.001	-	0.001	-	0.001	-	0.001		
Flatfish	0-100FM	JAN-FEB 2002	53	-	0.197	-	0.197	-	0.000	-	0.000	-	0.000	-	0.000		
Flatfish	0-100FM	MAR-APR 2002	37	-	0.030	-	0.030	-	0.000	-	0.000	-	0.000	-	0.000		
Flatfish	0-100FM	MAY-JUN 2002	7	-	0.100	-	0.100	-	0.001	-	0.001	-	0.001	-	0.001		
Flatfish	100-200FM	SEP-OCT 2001	34	-	0.408	-	0.408	-	0.001	-	0.001	-	0.001	-	0.001		
Flatfish	100-200FM	NOV-DEC 2001	6	-	2.424	-	19.349	-	0.008	-	0.073	-	0.007	-	0.060		
Flatfish	100-200FM	JAN-FEB 2002	5	-	15.420	-	15.606	-	0.054	-	0.054	-	0.049	-	0.049		

Appendix Table IV.B. Continued. **NOTE: BE ESPECIALLY CAUTIOUS WHEN INTERPRETING THE ESTIMATES THAT ARE CALCULATED WITH LESS THAN 10 TOWS**

Strategy	Depth Range	Period	Number of Tows	Discarded lbs per hr	s.e.	Bycatch lbs per hr	s.e.	Discarded lbs per lb Target Species	s.e.	Bycatch lbs per lb Target Species	s.e.	Discarded lbs per lb of Groundfish	s.e.	Bycatch lbs per lb of Groundfish	s.e.
					Discarded lbs per hr		Bycatch lbs per hr		Discarded lbs per lb of Groundfish		Bycatch lbs per lb of Groundfish				
Flatfish	100-200FM	MAR-APR 2002	1	-	---	-	---	-	---	-	---	-	---	-	---
Flatfish	100-200FM	JUL-AUG 2002	3	-	0.168	-	0.168	-	0.001	-	0.001	-	0.001	-	0.001
Flatfish	>200FM	SEP-OCT 2001	4	-	8.011	-	0.879	-	0.105	-	0.012	-	0.071	-	0.008
Lingcod															
DTS	0-100FM	MAR-APR 2002	2	4.567	4.567	4.567	4.567	0.010	0.010	0.010	0.010	0.009	0.009	0.009	0.009
DTS	0-100FM	MAY-JUN 2002	3	4.519	1.135	6.815	2.625	0.012	0.005	0.017	0.009	0.008	0.003	0.011	0.005
DTS	100-200FM	SEP-OCT 2001	1	-	---	-	---	-	---	-	---	-	---	-	---
DTS	100-200FM	MAR-APR 2002	4	4.057	4.057	4.057	4.057	0.006	0.006	0.006	0.006	0.006	0.006	0.006	0.006
DTS	100-200FM	MAY-JUN 2002	7	0.583	0.277	2.042	1.227	0.002	0.002	0.008	0.006	0.002	0.001	0.007	0.005
DTS	100-200FM	JUL-AUG 2002	8	6.305	6.305	6.305	6.305	0.017	0.017	0.017	0.017	0.014	0.014	0.014	0.014
DTS	>200FM	SEP-OCT 2001	4	-	55.538	-	55.538	-	0.052	-	0.052	-	0.050	-	0.050
DTS	>200FM	JAN-FEB 2002	46	-	0.176	-	0.187	-	0.001	-	0.001	-	0.001	-	0.001
DTS	>200FM	MAR-APR 2002	59	-	0.964	-	1.036	-	0.002	-	0.002	-	0.002	-	0.002
DTS	>200FM	MAY-JUN 2002	37	0.009	0.009	0.009	0.009	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
DTS	>200FM	JUL-AUG 2002	156	-	0.013	-	0.069	-	0.000	-	0.000	-	0.000	-	0.000
Shelf RKF	0-100FM	SEP-OCT 2001	4	1.755	1.755	1.755	1.755	0.020	0.020	0.020	0.020	0.014	0.014	0.014	0.014
Shelf RKF	0-100FM	NOV-DEC 2001	1	10.347	---	10.347	---	0.021	---	0.021	---	0.012	---	0.012	---
Shelf RKF	0-100FM	JAN-FEB 2002	3	29.893	20.686	29.893	20.686	0.050	0.035	0.050	0.035	0.031	0.022	0.031	0.022
Shelf RKF	0-100FM	MAR-APR 2002	8	34.449	26.851	34.449	26.851	0.085	0.068	0.085	0.068	0.064	0.051	0.064	0.051
Shelf RKF	0-100FM	MAY-JUN 2002	6	31.874	20.312	31.874	20.312	0.020	0.013	0.020	0.013	0.018	0.011	0.018	0.011
Shelf RKF	100-200FM	SEP-OCT 2001	5	5.850	2.091	5.850	2.091	0.035	0.021	0.035	0.021	0.025	0.013	0.025	0.013
Shelf RKF	100-200FM	JAN-FEB 2002	5	5.409	5.409	5.409	5.409	0.011	0.011	0.011	0.011	0.009	0.009	0.009	0.009
Shelf RKF	100-200FM	MAR-APR 2002	2	209.030	209.030	209.030	209.030	1.254	1.254	1.254	1.254	1.045	1.045	1.045	1.045
Shelf RKF	100-200FM	MAY-JUN 2002	2	-	3.976	-	12.309	-	0.013	-	0.039	-	0.008	-	0.025
Slope RKF	100-200FM	SEP-OCT 2001	1	53.127	---	53.127	---	0.221	---	0.221	---	0.143	---	0.143	---
Slope RKF	100-200FM	NOV-DEC 2001	5	298.736	91.652	298.736	91.652	0.773	0.248	0.773	0.248	0.600	0.185	0.600	0.185
Slope RKF	100-200FM	JAN-FEB 2002	18	8.202	1.967	8.202	1.967	0.026	0.010	0.026	0.010	0.022	0.007	0.022	0.007
Slope RKF	100-200FM	MAR-APR 2002	11	13.872	6.068	15.548	6.067	0.007	0.005	0.008	0.005	0.007	0.005	0.008	0.005
Slope RKF	100-200FM	MAY-JUN 2002	8	3.885	2.585	4.422	3.099	0.002	0.001	0.002	0.002	0.002	0.001	0.002	0.002
Slope RKF	100-200FM	JUL-AUG 2002	3	-	5.537	-	5.537	-	0.004	-	0.004	-	0.004	-	0.004
Slope RKF	>200FM	MAY-JUN 2002	10	0.206	0.206	0.206	0.206	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
Slope RKF	>200FM	JUL-AUG 2002	1	-	---	-	---	-	---	-	---	-	---	-	---
Flatfish	0-100FM	SEP-OCT 2001	127	5.354	2.288	7.152	2.400	0.034	0.015	0.046	0.016	0.032	0.014	0.042	0.015
Flatfish	0-100FM	NOV-DEC 2001	35	20.970	11.337	21.131	11.331	0.178	0.103	0.179	0.103	0.162	0.093	0.163	0.093
Flatfish	0-100FM	JAN-FEB 2002	53	3.181	2.271	4.545	2.556	0.007	0.005	0.010	0.006	0.007	0.005	0.010	0.006
Flatfish	0-100FM	MAR-APR 2002	37	2.772	1.066	6.012	2.342	0.009	0.004	0.020	0.009	0.009	0.004	0.019	0.009
Flatfish	0-100FM	MAY-JUN 2002	7	6.342	4.721	9.261	5.272	0.083	0.063	0.121	0.073	0.055	0.043	0.080	0.051
Flatfish	100-200FM	SEP-OCT 2001	34	3.393	0.900	7.870	1.104	0.010	0.003	0.024	0.004	0.010	0.003	0.023	0.004
Flatfish	100-200FM	NOV-DEC 2001	6	23.915	21.585	23.915	21.585	0.071	0.065	0.071	0.065	0.062	0.057	0.062	0.057
Flatfish	100-200FM	JAN-FEB 2002	5	4.195	2.190	6.957	3.476	0.014	0.008	0.023	0.013	0.013	0.007	0.021	0.012

Appendix Table IV.B. Continued. **NOTE: BE ESPECIALLY CAUTIOUS WHEN INTERPRETING THE ESTIMATES THAT ARE CALCULATED WITH LESS THAN 10 TOWS**

Strategy	Depth Range	Period	Number of Tows	Discarded lbs per hr	s.e.	Bycatch lbs per hr	s.e.	Discarded lbs per lb	s.e.	Discarded lbs per lb	s.e.	Discarded lbs per lb of Groundfish	s.e.	Bycatch lbs per lb of Groundfish	s.e.
					lbs per hr		lbs per hr	Target Species	Target Species	Target Species	Target Species	Target Species	Target Species		
Flatfish	100-200FM	MAR-APR 2002	1	38.603	---	38.603	---	0.102	---	0.102	---	0.094	---	0.094	---
Flatfish	100-200FM	JUL-AUG 2002	3	10.620	4.193	10.620	4.193	0.074	0.035	0.074	0.035	0.068	0.031	0.068	0.031
Flatfish	>200FM	SEP-OCT 2001	4	0.665	0.313	0.665	0.313	0.009	0.004	0.009	0.004	0.006	0.003	0.006	0.003
Pacific Halibut															
DTS	0-100FM	MAR-APR 2002	2	-	4.567	-	4.567	-	0.010	-	0.010	-	0.009	-	0.009
DTS	0-100FM	MAY-JUN 2002	3	-	1.135	-	2.625	-	0.005	-	0.009	-	0.003	-	0.005
DTS	100-200FM	SEP-OCT 2001	1	-	---	-	---	-	---	-	---	-	---	-	---
DTS	100-200FM	MAR-APR 2002	4	-	4.057	-	4.057	-	0.006	-	0.006	-	0.006	-	0.006
DTS	100-200FM	MAY-JUN 2002	7	-	0.277	-	1.227	-	0.002	-	0.006	-	0.001	-	0.005
DTS	100-200FM	JUL-AUG 2002	8	-	6.305	-	6.305	-	0.017	-	0.017	-	0.014	-	0.014
DTS	>200FM	SEP-OCT 2001	4	-	55.538	-	55.538	-	0.052	-	0.052	-	0.050	-	0.050
DTS	>200FM	JAN-FEB 2002	46	-	0.176	-	0.187	-	0.001	-	0.001	-	0.001	-	0.001
DTS	>200FM	MAR-APR 2002	59	-	0.964	-	1.036	-	0.002	-	0.002	-	0.002	-	0.002
DTS	>200FM	MAY-JUN 2002	37	-	0.009	-	0.009	-	0.000	-	0.000	-	0.000	-	0.000
DTS	>200FM	JUL-AUG 2002	156	-	0.013	-	0.069	-	0.000	-	0.000	-	0.000	-	0.000
Shelf RKF	0-100FM	SEP-OCT 2001	4	-	1.755	-	1.755	-	0.020	-	0.020	-	0.014	-	0.014
Shelf RKF	0-100FM	NOV-DEC 2001	1	-	---	-	---	-	---	-	---	-	---	-	---
Shelf RKF	0-100FM	JAN-FEB 2002	3	-	20.686	-	20.686	-	0.035	-	0.035	-	0.022	-	0.022
Shelf RKF	0-100FM	MAR-APR 2002	8	-	26.851	-	26.851	-	0.068	-	0.068	-	0.051	-	0.051
Shelf RKF	0-100FM	MAY-JUN 2002	6	-	20.312	-	20.312	-	0.013	-	0.013	-	0.011	-	0.011
Shelf RKF	100-200FM	SEP-OCT 2001	5	-	2.091	-	2.091	-	0.021	-	0.021	-	0.013	-	0.013
Shelf RKF	100-200FM	JAN-FEB 2002	5	-	5.409	-	5.409	-	0.011	-	0.011	-	0.009	-	0.009
Shelf RKF	100-200FM	MAR-APR 2002	2	-	209.030	-	209.030	-	1.254	-	1.254	-	1.045	-	1.045
Shelf RKF	100-200FM	MAY-JUN 2002	2	-	3.976	-	12.309	-	0.013	-	0.039	-	0.008	-	0.025
Slope RKF	100-200FM	SEP-OCT 2001	1	-	---	-	---	-	---	-	---	-	---	-	---
Slope RKF	100-200FM	NOV-DEC 2001	5	-	91.652	-	91.652	-	0.248	-	0.248	-	0.185	-	0.185
Slope RKF	100-200FM	JAN-FEB 2002	18	-	1.967	-	1.967	-	0.010	-	0.010	-	0.007	-	0.007
Slope RKF	100-200FM	MAR-APR 2002	11	-	6.068	-	6.067	-	0.005	-	0.005	-	0.005	-	0.005
Slope RKF	100-200FM	MAY-JUN 2002	8	-	2.585	-	3.099	-	0.001	-	0.002	-	0.001	-	0.002
Slope RKF	100-200FM	JUL-AUG 2002	3	-	5.537	-	5.537	-	0.004	-	0.004	-	0.004	-	0.004
Slope RKF	>200FM	MAY-JUN 2002	10	-	0.206	-	0.206	-	0.000	-	0.000	-	0.000	-	0.000
Slope RKF	>200FM	JUL-AUG 2002	1	-	---	-	---	-	---	-	---	-	---	-	---
Flatfish	0-100FM	SEP-OCT 2001	127	-	2.288	-	2.400	-	0.015	-	0.016	-	0.014	-	0.015
Flatfish	0-100FM	NOV-DEC 2001	35	-	11.337	-	11.331	-	0.103	-	0.103	-	0.093	-	0.093
Flatfish	0-100FM	JAN-FEB 2002	53	-	2.271	-	2.556	-	0.005	-	0.006	-	0.005	-	0.006
Flatfish	0-100FM	MAR-APR 2002	37	-	1.066	-	2.342	-	0.004	-	0.009	-	0.004	-	0.009
Flatfish	0-100FM	MAY-JUN 2002	7	-	4.721	-	5.272	-	0.063	-	0.073	-	0.043	-	0.051
Flatfish	100-200FM	SEP-OCT 2001	34	-	0.900	-	1.104	-	0.003	-	0.004	-	0.003	-	0.004
Flatfish	100-200FM	NOV-DEC 2001	6	-	21.585	-	21.585	-	0.065	-	0.065	-	0.057	-	0.057
Flatfish	100-200FM	JAN-FEB 2002	5	1.515	1.515	1.515	1.515	0.005	0.005	0.005	0.005	0.005	0.005	0.005	0.005

Appendix Table IV.B. Continued. **NOTE: BE ESPECIALLY CAUTIOUS WHEN INTERPRETING THE ESTIMATES THAT ARE CALCULATED WITH LESS THAN 10 TOWS**

Strategy	Depth Range	Period	Number of Tows	Discarded lbs per hr	s.e.	Bycatch lbs per hr	s.e.	Discarded lbs per lb Target Species	s.e.	Bycatch lbs per lb Target Species	s.e.	Discarded lbs per lb of Groundfish	s.e.	Bycatch lbs per lb of Groundfish	s.e.
					Discarded lbs per hr		Bycatch lbs per hr		Discarded lbs per lb of Groundfish		Bycatch lbs per lb of Groundfish				
Flatfish	100-200FM	MAR-APR 2002	1	-	---	-	---	-	---	-	---	-	---	-	---
Flatfish	100-200FM	JUL-AUG 2002	3	-	4.193	-	4.193	-	0.035	-	0.035	-	0.031	-	0.031
Flatfish	>200FM	SEP-OCT 2001	4	-	0.313	-	0.313	-	0.004	-	0.004	-	0.003	-	0.003
Salmon															
DTS	0-100FM	MAR-APR 2002	2	-	4.567	-	4.567	-	0.010	-	0.010	-	0.009	-	0.009
DTS	0-100FM	MAY-JUN 2002	3	-	1.135	-	2.625	-	0.005	-	0.009	-	0.003	-	0.005
DTS	100-200FM	SEP-OCT 2001	1	-	---	-	---	-	---	-	---	-	---	-	---
DTS	100-200FM	MAR-APR 2002	4	-	4.057	-	4.057	-	0.006	-	0.006	-	0.006	-	0.006
DTS	100-200FM	MAY-JUN 2002	7	-	0.277	-	1.227	-	0.002	-	0.006	-	0.001	-	0.005
DTS	100-200FM	JUL-AUG 2002	8	-	6.305	-	6.305	-	0.017	-	0.017	-	0.014	-	0.014
DTS	>200FM	SEP-OCT 2001	4	-	55.538	-	55.538	-	0.052	-	0.052	-	0.050	-	0.050
DTS	>200FM	JAN-FEB 2002	46	-	0.176	-	0.187	-	0.001	-	0.001	-	0.001	-	0.001
DTS	>200FM	MAR-APR 2002	59	-	0.964	-	1.036	-	0.002	-	0.002	-	0.002	-	0.002
DTS	>200FM	MAY-JUN 2002	37	-	0.009	-	0.009	-	0.000	-	0.000	-	0.000	-	0.000
DTS	>200FM	JUL-AUG 2002	156	0.007	0.007	0.007	0.007	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
Shelf RKF	0-100FM	SEP-OCT 2001	4	-	1.755	-	1.755	-	0.020	-	0.020	-	0.014	-	0.014
Shelf RKF	0-100FM	NOV-DEC 2001	1	5.508	---	5.508	---	0.011	---	0.011	---	0.006	---	0.006	---
Shelf RKF	0-100FM	JAN-FEB 2002	3	-	20.686	-	20.686	-	0.035	-	0.035	-	0.022	-	0.022
Shelf RKF	0-100FM	MAR-APR 2002	8	0.453	0.453	0.453	0.453	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001
Shelf RKF	0-100FM	MAY-JUN 2002	6	-	20.312	-	20.312	-	0.013	-	0.013	-	0.011	-	0.011
Shelf RKF	100-200FM	SEP-OCT 2001	5	-	2.091	-	2.091	-	0.021	-	0.021	-	0.013	-	0.013
Shelf RKF	100-200FM	JAN-FEB 2002	5	1.315	0.856	1.315	0.856	0.003	0.002	0.003	0.002	0.002	0.001	0.002	0.001
Shelf RKF	100-200FM	MAR-APR 2002	2	-	209.030	-	209.030	-	1.254	-	1.254	-	1.045	-	1.045
Shelf RKF	100-200FM	MAY-JUN 2002	2	-	3.976	-	12.309	-	0.013	-	0.039	-	0.008	-	0.025
Slope RKF	100-200FM	SEP-OCT 2001	1	-	---	-	---	-	---	-	---	-	---	-	---
Slope RKF	100-200FM	NOV-DEC 2001	5	-	91.652	-	91.652	-	0.248	-	0.248	-	0.185	-	0.185
Slope RKF	100-200FM	JAN-FEB 2002	18	0.143	0.143	0.143	0.143	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
Slope RKF	100-200FM	MAR-APR 2002	11	0.164	0.164	0.164	0.164	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
Slope RKF	100-200FM	MAY-JUN 2002	8	-	2.585	-	3.099	-	0.001	-	0.002	-	0.001	-	0.002
Slope RKF	100-200FM	JUL-AUG 2002	3	-	5.537	-	5.537	-	0.004	-	0.004	-	0.004	-	0.004
Slope RKF	>200FM	MAY-JUN 2002	10	-	0.206	-	0.206	-	0.000	-	0.000	-	0.000	-	0.000
Slope RKF	>200FM	JUL-AUG 2002	1	-	---	-	---	-	---	-	---	-	---	-	---
Flatfish	0-100FM	SEP-OCT 2001	127	0.141	0.051	0.141	0.051	0.001	0.000	0.001	0.000	0.001	0.000	0.001	0.000
Flatfish	0-100FM	NOV-DEC 2001	35	0.087	0.078	0.087	0.078	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001
Flatfish	0-100FM	JAN-FEB 2002	53	0.168	0.113	0.321	0.125	0.000	0.000	0.001	0.000	0.000	0.000	0.001	0.000
Flatfish	0-100FM	MAR-APR 2002	37	0.130	0.130	0.130	0.130	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
Flatfish	0-100FM	MAY-JUN 2002	7	0.304	0.221	0.304	0.221	0.004	0.003	0.004	0.003	0.003	0.002	0.003	0.002
Flatfish	100-200FM	SEP-OCT 2001	34	-	0.900	-	1.104	-	0.003	-	0.004	-	0.003	-	0.004
Flatfish	100-200FM	NOV-DEC 2001	6	0.535	0.535	0.535	0.535	0.002	0.002	0.002	0.002	0.001	0.001	0.001	0.001
Flatfish	100-200FM	JAN-FEB 2002	5	2.040	2.040	2.040	2.040	0.007	0.007	0.007	0.007	0.006	0.006	0.006	0.006

Appendix Table IV.B. Continued. **NOTE: BE ESPECIALLY CAUTIOUS WHEN INTERPRETING THE ESTIMATES THAT ARE CALCULATED WITH LESS THAN 10 TOWS**

Strategy	Depth Range	Period	Number of Tows	Discarded lbs per hr	s.e.	Bycatch lbs per hr	s.e.	Discarded lbs per lb Target Species	s.e.	Bycatch lbs per lb Target Species	s.e.	Discarded lbs per lb of Groundfish	s.e.	Bycatch lbs per lb of Groundfish	s.e.
					Discarded lbs per hr		Bycatch lbs per hr		Discarded lbs per lb Target Species		Bycatch lbs per lb Target Species		Discarded lbs per lb of Groundfish		Bycatch lbs per lb of Groundfish
Flatfish	100-200FM	MAR-APR 2002	1	-	---	-	---	-	---	-	---	-	---	-	---
Flatfish	100-200FM	JUL-AUG 2002	3	2.580	1.284	2.580	1.284	0.018	0.010	0.018	0.010	0.016	0.009	0.016	0.009
Flatfish	>200FM	SEP-OCT 2001	4	-	0.313	-	0.313	-	0.004	-	0.004	-	0.003	-	0.003
Shark, Skate															
DTS	0-100FM	MAR-APR 2002	2	115.229	57.177	152.438	54.349	0.249	0.239	0.330	0.315	0.227	0.206	0.301	0.268
DTS	0-100FM	MAY-JUN 2002	3	24.696	11.575	26.992	10.084	0.063	0.036	0.069	0.035	0.041	0.021	0.045	0.020
DTS	100-200FM	SEP-OCT 2001	1	-	---	-	---	-	---	-	---	-	---	-	---
DTS	100-200FM	MAR-APR 2002	4	132.626	118.137	198.861	180.711	0.209	0.193	0.314	0.293	0.195	0.180	0.292	0.273
DTS	100-200FM	MAY-JUN 2002	7	73.257	10.937	73.257	10.937	0.281	0.189	0.281	0.189	0.236	0.135	0.236	0.135
DTS	100-200FM	JUL-AUG 2002	8	26.447	8.433	26.447	8.433	0.071	0.025	0.071	0.025	0.059	0.020	0.059	0.020
DTS	>200FM	SEP-OCT 2001	4	102.648	57.998	102.648	57.998	0.094	0.055	0.094	0.055	0.090	0.053	0.090	0.053
DTS	>200FM	JAN-FEB 2002	46	31.546	6.183	31.763	6.194	0.108	0.025	0.108	0.025	0.106	0.024	0.107	0.024
DTS	>200FM	MAR-APR 2002	59	30.821	5.768	37.767	6.169	0.070	0.016	0.086	0.017	0.064	0.014	0.078	0.016
DTS	>200FM	MAY-JUN 2002	37	21.731	4.499	22.840	4.625	0.049	0.013	0.052	0.013	0.049	0.012	0.051	0.013
DTS	>200FM	JUL-AUG 2002	156	15.865	2.509	15.865	2.509	0.046	0.008	0.046	0.008	0.045	0.008	0.045	0.008
Shelf RKF	0-100FM	SEP-OCT 2001	4	15.884	8.299	15.884	8.299	0.183	0.106	0.183	0.106	0.123	0.073	0.123	0.073
Shelf RKF	0-100FM	NOV-DEC 2001	1	39.908	---	39.908	---	0.080	---	0.080	---	0.045	---	0.045	---
Shelf RKF	0-100FM	JAN-FEB 2002	3	372.711	253.539	389.708	250.069	0.618	0.428	0.646	0.424	0.392	0.272	0.410	0.269
Shelf RKF	0-100FM	MAR-APR 2002	8	83.984	18.620	96.246	21.025	0.207	0.071	0.237	0.081	0.156	0.050	0.178	0.057
Shelf RKF	0-100FM	MAY-JUN 2002	6	1,170.533	437.118	1,221.676	439.625	0.746	0.316	0.778	0.321	0.645	0.250	0.673	0.252
Shelf RKF	100-200FM	SEP-OCT 2001	5	330.805	317.946	464.094	441.824	1.966	1.910	2.758	2.661	1.386	1.343	1.945	1.870
Shelf RKF	100-200FM	JAN-FEB 2002	5	46.508	16.131	46.508	16.131	0.099	0.038	0.099	0.038	0.079	0.031	0.079	0.031
Shelf RKF	100-200FM	MAR-APR 2002	2	58.140	57.703	58.140	57.703	0.349	0.347	0.349	0.347	0.291	0.289	0.291	0.289
Shelf RKF	100-200FM	MAY-JUN 2002	2	231.226	219.640	236.226	217.319	0.732	0.683	0.748	0.667	0.473	0.441	0.483	0.431
Slope RKF	100-200FM	SEP-OCT 2001	1	-	---	272.727	---	-	---	1.136	---	-	---	0.734	---
Slope RKF	100-200FM	NOV-DEC 2001	5	157.213	76.971	157.213	76.971	0.407	0.202	0.407	0.202	0.316	0.155	0.316	0.155
Slope RKF	100-200FM	JAN-FEB 2002	18	76.044	21.148	76.044	21.148	0.245	0.096	0.245	0.096	0.206	0.074	0.206	0.074
Slope RKF	100-200FM	MAR-APR 2002	11	15.201	6.311	15.201	6.311	0.008	0.005	0.008	0.005	0.008	0.005	0.008	0.005
Slope RKF	100-200FM	MAY-JUN 2002	8	73.363	24.507	73.363	24.507	0.033	0.021	0.033	0.021	0.032	0.020	0.032	0.020
Slope RKF	100-200FM	JUL-AUG 2002	3	33.718	20.063	33.718	20.063	0.017	0.015	0.017	0.015	0.016	0.014	0.016	0.014
Slope RKF	>200FM	MAY-JUN 2002	10	32.194	13.533	32.194	13.533	0.017	0.010	0.017	0.010	0.017	0.010	0.017	0.010
Slope RKF	>200FM	JUL-AUG 2002	1	401.846	---	401.846	---	2.715	---	2.715	---	2.512	---	2.512	---
Flatfish	0-100FM	SEP-OCT 2001	127	102.420	9.698	105.293	9.792	0.656	0.094	0.674	0.096	0.606	0.085	0.624	0.087
Flatfish	0-100FM	NOV-DEC 2001	35	99.541	15.749	100.939	16.127	0.843	0.247	0.855	0.252	0.770	0.214	0.781	0.218
Flatfish	0-100FM	JAN-FEB 2002	53	72.535	13.629	87.243	15.280	0.155	0.044	0.186	0.051	0.153	0.043	0.184	0.050
Flatfish	0-100FM	MAR-APR 2002	37	52.218	10.905	61.571	11.831	0.172	0.057	0.203	0.065	0.169	0.056	0.199	0.064
Flatfish	0-100FM	MAY-JUN 2002	7	145.428	50.490	151.943	55.396	1.895	0.792	1.980	0.854	1.256	0.589	1.312	0.631
Flatfish	100-200FM	SEP-OCT 2001	34	86.203	27.334	149.828	25.813	0.262	0.086	0.455	0.088	0.251	0.082	0.437	0.083
Flatfish	100-200FM	NOV-DEC 2001	6	177.501	68.148	177.501	68.148	0.524	0.277	0.524	0.277	0.463	0.224	0.463	0.224
Flatfish	100-200FM	JAN-FEB 2002	5	165.233	72.662	165.233	72.662	0.545	0.285	0.545	0.285	0.495	0.254	0.495	0.254
Flatfish	100-200FM	MAR-APR 2002	1	51.757	---	51.757	---	0.137	---	0.137	---	0.127	---	0.127	---
Flatfish	100-200FM	JUL-AUG 2002	3	104.736	33.965	104.736	33.965	0.727	0.302	0.727	0.302	0.668	0.273	0.668	0.273
Flatfish	>200FM	SEP-OCT 2001	4	43.148	30.324	99.947	19.097	0.563	0.396	1.305	0.253	0.381	0.269	0.883	0.181

NORTHWEST FISHERIES SCIENCE CENTER
WEST COAST GROUND FISH OBSERVER PROGRAM
DATA REPORT AND SUMMARY ANALYSES

January 2004

Introduction

Goal of this Report

This report is an update of the report released in January 2003 by the West Coast Groundfish Observer Program (WCGOP), which summarized the first year of data collection. The WCGOP collects at-sea data onboard the west groundfish fleet (excluding the at-sea and shoreside whiting fleet¹). The WCGOP's goal is to collect information on the discard of west coast groundfish to be used in assessing the total fishing mortality of a variety of groundfish species. This report includes trawl data collected during the first two years of the program (Sept 2001-Aug 2003).

The West Coast Groundfish Fishery

The groundfish fishery off the west coast of the United States operates from the Canadian to the Mexican border. Multiple vessel types participate in this fishery. Vessels delivering to shoreside processors range in size from 8' kayaks to 120' trawlers. They fish in both nearshore and offshore waters. The vessels use various types of gear including bottom trawls, midwater trawls, pots, longlines and other hook and line gear to catch over 80 species. Trawlers take the majority of groundfish. The catch can be very diverse. Fish size and overall volume of catch can vary widely. In many cases, a portion of the catch is retained, while another portion is discarded at sea. The catch may be discarded at sea because it is unmarketable or is in excess of management limits.

Active management of the fishery began in the early 1980's with the establishment of Optimal Yields (OYs) for several managed species and trip limits for widow rockfish, the Sebastes complex, and sablefish. The objective of trip limits has been to slow the pace of landings to maintain year-round fishing, processing, and marketing opportunities. Since the 1980's, management regulations generally have evolved to the use of cumulative 2-month landing limits.

¹ The at-sea Pacific whiting fleet is monitored by another section of the WCGOP. The shoreside Pacific whiting fleet retains all catch and that catch is monitored by state port samplers.

Fisheries managers use state-issued sales receipts (fish tickets) and vessel logbooks to monitor landings. Fish ticket and vessel logbook data are transferred to the Pacific Fisheries Information Network (PacFIN) by state fisheries agencies in Washington, Oregon and California. The fish tickets are useful in tracking the pace of the fishery throughout the year. Trip limit amounts may be changed throughout the year based on this information. In order to comply with annual OYs, managers also need information on the discard of each species. One of the best means of acquiring accurate data needed to estimate the amount of discarded catch is through an at-sea observer program.

Methods

West Coast Groundfish Observer Program

On May 24, 2001, NOAA Fisheries (NMFS) established the WCGOP to implement the Pacific Coast Groundfish Fishery Management Plan (50 CFR Part 660). This regulation requires all vessels that participate in the groundfish fishery to carry an observer when notified to do so by NMFS or its designated agent. The observer program's goal is to improve estimates of total catch and discard. The program deploys as many as 40 observers, depending on seasonal variation in fishing activity. These observers are stationed along the coast from Bellingham, WA to San Diego, CA.

Program Goals

During the first year of coverage, the sampling goal for the WCGOP was to provide observation of 10% of the coast wide limited entry trawl landings of groundfish species other than whiting (as reported in fish tickets). An additional goal was to provide pilot observer coverage in the limited entry fixed gear sablefish and rockfish fisheries (The observer coverage plan is available at: www.nwfsc.noaa.gov/fram/observer). During the second year of coverage, the program's goal was to increase trawl coverage and expand coverage of the limited entry fixed gear sablefish and open access fisheries targeting rockfish.

Vessel Selection Process

The WCGOP aggregates ports along the west coast into "port groups". Limited entry trawl permits in each port group are randomized and sequentially selected for observation for an entire two-month cumulative trip limit period. This selection process is designed to produce a reasonably proportional distribution of observations along the coast. Based on this design, the program has

cycled through all limited entry trawlers during each year of the program. However, due to the recent buyback program², the program expects to cycle through the fleet more frequently in the future.

The program also selects limited entry fixed gear permits and state permits in the open access fleets. The sablefish endorsed limited entry fixed gear permits are selected for coverage during the entire primary sablefish season to ensure that the total quota fished on each selected permit is observed. The program expects to complete the coverage of all the sablefish endorsed limited entry fixed gear permits by the end of 2004. The data for this coverage will be summarized in another report.

Similar to the trawlers, non-sablefish endorsed limited entry permits and state licenses in the open access fleets are randomly selected for a two-month cumulative trip limit period.

The program expects to complete the coverage of all non-sablefish endorsed limited entry fixed gear permits by the end of 2004.

Coverage of open-access vessels targeting groundfish has been hampered by the availability of contact information for this fleet and the logistical challenges of placing observers on small boats. In addition, state agencies needed time to amend their regulations to allow WCGOP observers on vessels operating in state waters. A report on coverage of these fleets is anticipated during 2005.

General Data Collections

The fisheries observers are trained professionals who monitor and record catch data on commercial fishing vessels, following the protocols in the WCGOP Manual (NMFS, NWFSC, 2003, unpublished report). The data collected by the observers include:

- Start time, end time and location of tow/set
- Gear type and fishing strategy
- Estimated total catch weight (including tows/sets for which there is 100% discard)
- Weight of discard by catch category
- Reason for discard by catch category or species
- Species composition of discard by catch category

² The buyback program allowed a limited number of permit owners to receive compensation for surrendering their permit and vessel. Due to this program, the number of trawl permits fishing on the coast was reduced by 92.

- Weight of fish retained by catch category
- Species composition of retained by catch category
- Document catch of prohibited species and incidental take of protected species
- Size composition, tags, and viability assessments for Pacific halibut
- Size composition of discarded fish (from randomly selected categories)
- Size composition of retained fish (from randomly selected categories)
- Basic taxonomic composition of non-fish bycatch
- Special biological collections (otoliths, maturity, food habits, genetic samples, etc.)

Data Flow

The eight steps of data processing prior to analysis are detailed below.

1. Data are collected at-sea by the observer following the protocols in the WCGOP Manual (NMFS, NWFSC, 2003, unpublished report).
2. Data are entered into the database system.
 - a. During 2003, WCGOP used a web-based graphical user interface (GUI) to directly enter data into a centralized Oracle database located at the Northwest Fisheries Science Center (NWFSC). Data within the Oracle database are accessible via the web-based GUI or by direct SQL queries to the database. For a list of data tables, see appendix A.
3. Quality Control (QC) of calculations and sampling methods.
 - a. A debriefer or lead observer checks all computations made by the observer and reviews form to ensure that it is complete and that appropriate sampling methods were used.
4. Debriefing
 - a. Observers debrief after every two-month cumulative trip limit period. Debriefing includes:
 - i. Vessel Data - Observers complete a vessel survey for each vessel that explains vessel set-up and basic sampling methodologies.
 - ii. Logbook Review - Observers keep logbooks detailing the events of each trip, basic deck schematics, sampling methods used, communication logs, and confirmation of a current safety decal. Any hauls during which sampling

problems occurred are documented in the logbook and reviewed during debriefing.

iii. Data Correction - Observer corrects all calculations and errors in data forms.

iv. Evaluation - Observers are evaluated on their performance.

5. Data checked and updated in database program.

a. Electronic data is compared to raw data to check for keypunch errors.

Also, all corrections discovered during debriefing are updated in the database program.

6. Quality Control (QC) Queries

a. Queries are run to detect data fall outside specified ranges or other inconsistencies between data elements.

7. Data updated in database system

a. The raw data of all entries that are highlighted by the QC queries are reviewed and the electronic data is updated.

8. Data released to analyst team.

a. At this point, data are considered complete and ready for analysis.

Analysis

Improvements and Changes Made in Analyses and Summary for data collected from September 2002 to August 2003

The first report on the West Coast Groundfish Observer Program (WCGOP) was released in January 2003, entitled “Northwest Fisheries Science Center West Coast Groundfish Observer Program Initial Data Report and Summary Analyses” (it is available at <http://www.nwfsc.noaa.gov/research/divisions/fram/Observer/datareport.cfm>). That report described the analysis of observer data for various species collected during the first year of the program (September 1, 2001 to August 31, 2002). The data analyzed included bottom trawlers using both large and small footropes as well as trawlers using mid-water gear. The report also included any data collected by WCGOP on vessels that participated in trawl gear Experimental Fishing Permits (EFP) authorized by the Pacific Fishery Management Council (PFMC).

During the past year, the WCGOP has solicited valuable comments from readers for statistical and data summary format, which we have incorporated in this year's report.

In this report, we have added summary tables (Tables 4 and 5) that present the data in larger areas and longer time periods than the detailed data presented in Tables 6 and 7. Generally, data from observed EFP trips are excluded from these summary tables, as they are not representative of normal fishing activity, and their results are summarized elsewhere in reports by the sponsoring states. They are included in the evaluation of fleet coverage, however, as EFP trips cannot be reliably excluded from fish ticket records used to document total fleet landings.

The WCGOP report released in January 2003 included an assigned fishing strategy in the stratification of many of the report's tables. The primary reason for doing so was the use of those strategies in the trawl-fleet bycatch model, as configured at that time. Since the bycatch model no longer utilizes these target strategies, data summarization in this report focuses on identifying differences in bycatch associated with area, depth, and time of year. To the extent possible, however, Tables 1 through 7 include details provided in the first report.

In addition, depth intervals throughout this report differ somewhat from those used in the January 2003 report. These changes were made so that the reported depth groupings would correspond more closely with the boundaries of areas used in managing the fishery.

During the past year, the fish ticket data from September 2001 to August 2002 in the PacFIN database have been updated substantially. In addition, the WCGOP has developed additional database data quality rules and queries to automate data quality control. In this report, we not only include data from the program's second year (September 2002 to August 2003), but also update the information from the first year (September 2001 to August 2002).

Continuing Unresolved Analytical Issues

Because observers' recording of retained catch is derived from vessels' hailed weights, accurate calculation of bycatch rates requires linking observer discard estimates to a data base that includes official weights for species determined at the time of landing. The two principal sources of landings data are fish tickets and logbooks that have been adjusted using fish tickets. It remains difficult to

match observer data with fish tickets and the logbooks, due to differences in data protocols among the states of Washington, Oregon, and California, and between the states and the WCGOP.

Each of the states employs different procedures for using fish ticket landings to adjust logbook retained catches (Sampson and Crone, 1997; Pearson and Erwin, 1997; Clark, 1986a, 1986b, 1988a, 1988b). Linking WCGOP records with corresponding logbook haul data is often difficult and time-consuming, due to the inconsistent adjustment protocols, and other factors such as: i) Incomplete logbook submission; ii) A significant number of logbook trips where tows are not recorded in chronological order; iii) The absence of some hauls in logbooks, especially where no groundfish are retained, and; iv) Inaccurate recording of tow locations, depth and date. If these issues were resolved, the analysis of observer data could be more comprehensive and timely.

As a result of these issues, we rely in this report on fish tickets as the source documenting the landed catch for observed trips. The procedures used to adjust haul-level retained haul weights reported by the observers are:

- (i) The retained weights collected by WCGOP are summed across hauls into catch categories for each trip. These catch categories are used, in conjunction with the landing dates in the observer and fish ticket records, to link fishing trips from both data bases.
- (ii) A table is created that links the fish ticket number with the WCGOP trip number. It was not possible to identify the correct links for 11 observed trips from the first year of the program (September 2001 to August 2002) and 25 observed trips from the second year of the program (September 2002 to August 2003). No adjustments to the hauled weights could be made for these trips.
- (iii) The catch categories for the WCGOP data are compared to the fish ticket catch categories.
 - a. For the catch categories that have weights existing in both the WCGOP data and on the fish ticket, the fish ticket catch is used as adjusted catch.
 - b. For the catch categories that exist in the WCGOP data only, the WCGOP catch is used.
 - c. For the catch categories existing on the fish ticket only, the fish ticket weight is used.
- (iv) Trip level adjusted catches are distributed across the hauls.

- a. For the catch categories existing in both the WCGOP data and on the fish tickets, the weight within each observer retained catch category are scaled up or down by the ratio of fish ticket and observer trip weights for that category.
- b. For the catch categories existing in WCGOP only, no adjustment is needed as this data is collected for each haul.
- c. For the catch categories existing on fish tickets only, the trip level fish ticket landings are distributed across hauls according to the proportion of the trip's total retained groundfish hauled weight attributed to each haul.

Since the catch categories on the fish tickets are recorded only at the trip level distributing landed weight across hauls is inevitably imprecise when haul specific observer data is unavailable. This is particularly true when a trip contains hauls from several different depth zones. While the current approach is to distribute these landings in proportion to each haul's percentage of the trip's total retained groundfish, future work will evaluate the incorporation of additional information that may improve these assignments. For catch categories that exist in both fish ticket and WCGOP records, this uncertainty in assigning poundage differences between observed trip retained weights and their corresponding fish tickets is reduced, although not eliminated, by knowledge of the pattern of hauled catches throughout the trip.

Results & Discussion

Overall Coverage Levels

The WCGOP coverage of total groundfish tonnage landed by limited entry trawlers not using mid-water gear averaged 13% from September 2001 to August 2002 (Table 1). This level of coverage exceeded the goal of 10% set for the first year. The second year's goal of increasing trawl coverage was also met, as observed tonnage accounted for 16% of the fleet total.

Spatial Distribution of Observations

In only three of the port groups listed in Table 1 did the percentage of observed landed tonnage decline in the second year of the program: the Neah Bay, San Francisco, and Morro Bay port groups. Collectively, ports in these three groups accounted for just 13% of trawl fleet landings

during the second year of the program. In general, the Puget Sound, Los Angeles and Santa Barbara port groups have received smaller percentages of coverage. Most of the vessels in the Puget Sound port group were involved with EFPs, in which they targeted large volumes of arrowtooth flounder, and were covered by state observers when not selected by the WCGOP. No trawl trips were covered in the two southernmost port groups as most landings made in the Los Angeles and Santa Barbara port groups are made by non-trawl fleets. The trawl tonnage landed in these two ports represented less than 0.3% of the fleet total. The non-trawl fleet information is not summarized in this report.

The number of trips that were observed is summed for each port group is shown in Table 2. The number of trips is by 2-month period, for each year of the program. The data in this table illustrate the highly variable nature of coverage levels. This variability results from seasonal and weather-related impacts on travel activity and differences between vessels in tonnage and species landed.

Plots of starting locations for observed bottom trawls and all bottom trawls recorded in state logbooks are provided in Figures 1a-3b. Figure 1a illustrates haul locations in north of Coos Bay, Oregon, during the first year of the program, while Figure 1b provides the same information for the second year. Most of the fishing grounds between 100-150 fm were closed to bottom trawling throughout most of the second year of observations. The effects of these closures are evident in the clustering of shelf tows between 75-100 fm depth contours between Tillamook and Newport, and in the area just north of Coos Bay (Figure 1b).

The distribution of hauls by depth is listed in Table 3 and plotted in Figure 4. This separation of information by depth shows even more clearly the impact of depth-based closures on the distribution of effort.

Figures 2a and 2b show the first and second year coverage, respectively, for the coastal area between Coos Bay and San Francisco. The combination of a reduction of trips out of ports in the Eureka and Crescent City areas, management's implementation of closed areas and an increase of observers in the area produced much better spatial coverage of fishing sites adjacent to those ports during the second year of the program (Figure 2b). Figures 3a and 3b compare the trawl coverage between the first and second year for the remainder of California south to Santa Barbara. With the

exception of trawl sites from Santa Barbara south, the area of observed tows are similar to vessel activity as recorded in logbooks. Overall, these figures show that there is a high degree of correspondence between the location of observed hauls and overall fleet activity, excluding Santa Barbara. Additionally, during the second year of the program there are fewer pockets of dense trawling activity where observer coverage is absent.

Discard Estimates

Amounts of discarded and retained catches for 23 species or species groups of groundfish are provided in Table 4. This table provides a summary of the information presented in Appendix Tables II and III of the January 2003 report. The data are categorized by area, depth zone, and observer-program year. The table is divided into sub-tables A-W for each species, with overfished species presented first. Table 5 shows the amounts of discarded and retained catches for California halibut, Pacific halibut and combined salmon species. Unlike Appendix Tables II and III of last year's report, Tables 4 and 5 do not include a target strategy dimension (as discussed in the Analysis section), nor do they show results by each 2-month period. Species discard rates are listed on a bi-monthly basis in Table 6.

The effect of depth-based closures are evident in the amounts of catch observed in the 75-150 fathom depth zone during the second year of observation, particularly south of 40°10' N. lat. Observed catch of bocaccio was greater than 11,000 lb during the first year in the southern area between 75 and 100 fathoms. The amount observed in that stratum during the second year was 15 lb. Similar reductions can be seen in this stratum for the other selected species. It should also be noted that the increase in the proportion of bocaccio that were discarded during the second year resulted from a management prohibition on retention of that species. A similar prohibition was in effect for cowcod through both years.

The percentage of catch that was discarded for several target species declined during the second year of observation. For example, during the first year of observation, 17% of the coastwide observed Dover sole catch was discarded. During the second year, the discard rate fell to 10%, in every observed area-depth stratum. The coastwide discard rate for shortspine thornyhead fell from 27% to 18% between years, with similar consistency across all area-depth strata.

Table 5 provides a similar accounting of retained and discarded catch for California halibut, Pacific halibut, and combined salmon species. Though not in the Groundfish FMP, California halibut is a bottom trawl target for some vessels with limited entry permits. Pacific halibut and salmon cannot be retained while fishing with trawl gear.

Due to the difficulties in matching logbook and observer data, ratio estimators for discard are calculated from observer data only. Three different ratio estimators for discard are presented in Table 6 for 29 groundfish and non-groundfish species or species groups. The three estimators are (1) discard per hour towed, (2) discard per pound of retained groundfish, and (3) discard of each species/group per pound of its own catch. Standard errors are also reported for each of these ratios. These results are summarized by area, depth zone, 2-month period, and the observer-program year in which the data were collected.

In many strata, the number of observed tows is very small. Additionally, as illustrated in Figure 5, for each of the overfished species, the vast majority of tows had no discard of the species. For example, in the second year of observations, only 4 out of 566 observed tows south of 40°10' N. lat. encountered any cowcod (Figure 5C). In species, such as lingcod, darklotched rockfish and Pacific ocean perch, nearly all tows had less than 30 pounds of discard. In a few cases (<100 tows), more than 150 lbs. were discarded. These few tows with larger discards accounted for a substantial share of discarded pounds. These factors can result in standard errors for the ratio estimators that are large, relative to the ratios themselves.

For each of eight overfished species, Table 7 reports the ratio estimate (and standard error) of total bycatch (discarded plus retained pounds) per pound of groundfish landed, for each observer-program year, area, depth zone, and 2-month period. The method of calculating these bycatch ratios is very similar to that employed in developing parameters for the trawl bycatch model used by the Council for management of the fishery. These bycatch rates are calculated using total retained groundfish as the denominator. The denominator used to calculate the rates in the bycatch model equals the sum of landed flatfish, thornyheads, sablefish and slope rockfish.

For the most part, the annual average rates at which these species were caught with all groundfish declined between the first and second years of observation. This is particularly true in the shallow and deep depth strata, which constitute the primary areas remaining open to the trawl fleet in 2004.

Due to smaller sizes, the ratios reported in each bi-monthly period are more variable. For lingcod, where the ratios increased between years 1 and 2, the most largest increases occur in less than 150 fathoms. In the southern area and waters less than 75 fathoms, lingcod bycatch was 1.405% of groundfish landed over the first year of observation, and 4.540% during the second year. The ratios in the northern area also increased in this depth stratum, rising from 3.783% to 4.744%. Although both areas also experienced higher bycatch rates for lingcod in the intermediate depth stratum (75-150 fathoms) during the second year of observations, little or no bottom trawling is expected to occur in this depth zone during 2004.

It is important to note that WCGOP only controls the selection of vessels. The activity of the selected vessels can vary in an unpredictable way. Therefore, the program cannot control the percentage of tonnage or trips observed. However, in the future, as patterns in vessel activity emerge, the coverage levels can be more easily controlled.

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Appendix A. Oracle Database

Database Table Hierarchy

TRIPS

- ▶ FISHING_ACTIVITIES
 - ▶ FISHING_LOCATIONS
 - ▶ CATCHES
 - ▶ SPECIES COMPOSITION
 - ▶ SPECIES_COMPOSITION_ITEMS
 - ▶ BIO_SPECIMENS
 - ▶ BIO_SPECIMEN_ITEMS
 - ▶ DISSECTIONS

Database Table Descriptions

The database tables listed in the table below are a subset of the total tables contained in the Oracle database. They represent the tables that are actually used to contain the observer data collected by the WCGOP.

BIO_SPECIMENS	Sets of species physical measurements resulting from sampling catches occurring in a haul or set
BIO_SPECIMEN_ITEMS	Physical measurements collected for an individual fish, mammal or bird occurring in a biological sample
CATCHES	PacFIN catch category based on estimates of fish caught during a haul or set
CATCH_CATEGORIES	PacFIN catch categories
DISSECTIONS	Physical specimens collected for an individual fish, mammal or bird
FISHING_ACTIVITIES	Fishing hauls or sets occurring during a trip
FISHING_LOCATIONS	Locations of hauls or sets
PORTS	Coastal cities where fishing activity is based out of
SPECIES	Fish, mammal and bird species that might be encountered during fishing
SPECIES_COMPOSITIONS	Sets of species weights and counts resulting from sampling catches occurring in a haul or set
SPECIES_COMPOSITIONS_ITEMS	Weights and counts for individual species occurring in a species composition sample
TRIPS	Sets of fishing activities that occur between the time a vessel leaves port and when it returns
VESSELS	Trawl, longline, pot or other fishing vessels

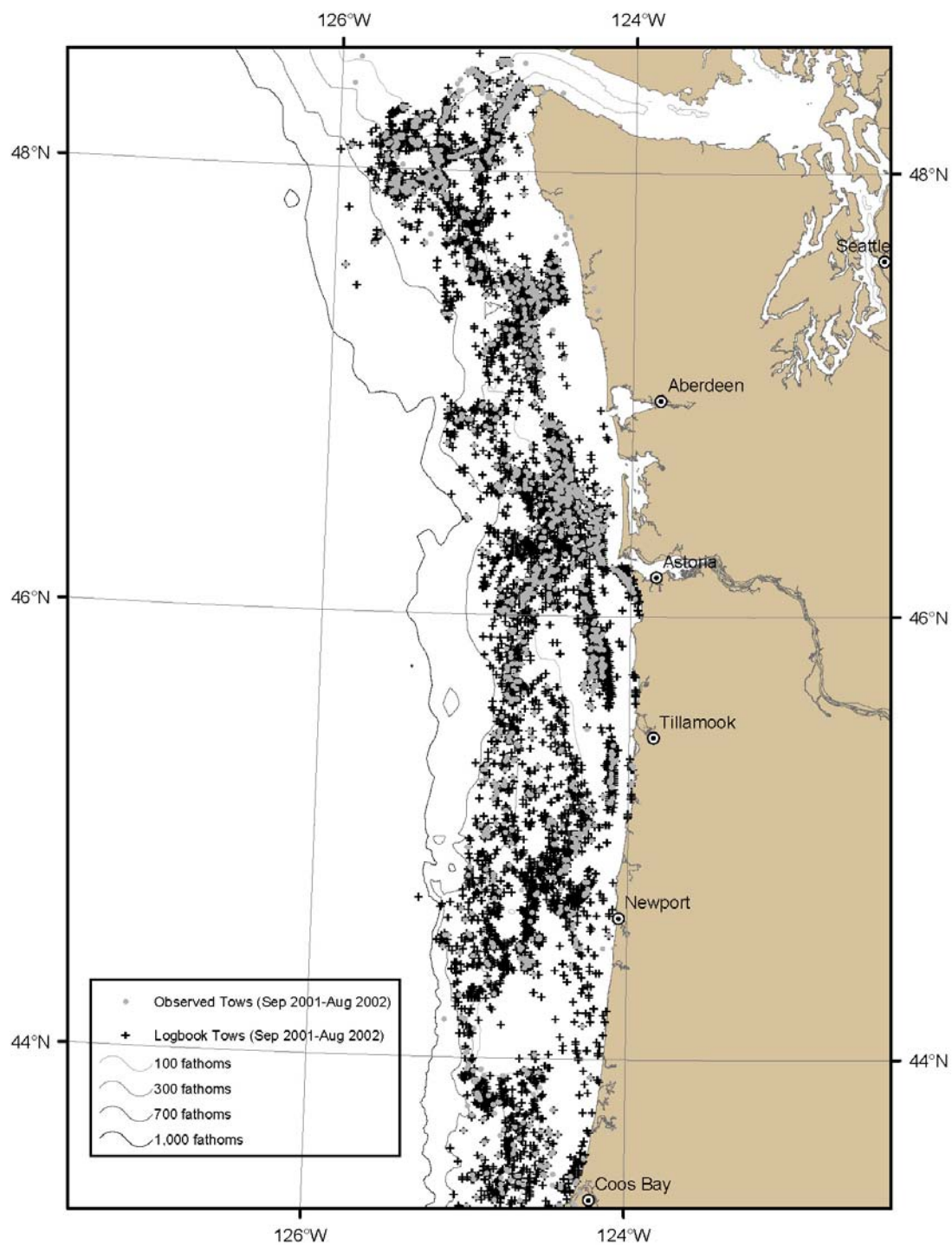


Figure 1a. Plot of locations for observed (•) and logbook (+) bottom trawls occurring north of Coos Bay, September 2001 and August 2002.

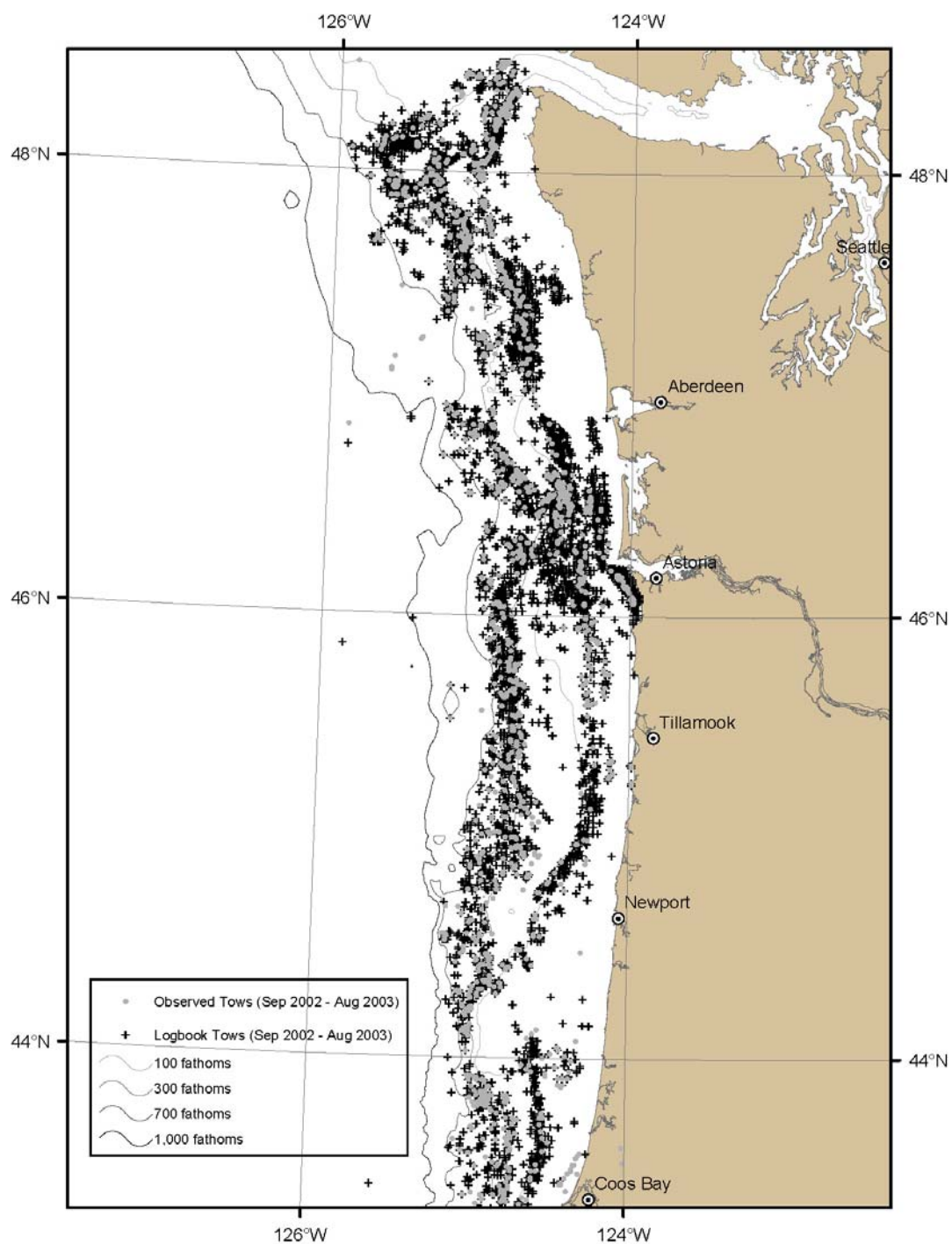


Figure 1b. Plot of locations for observed (●) and logbook (+) bottom trawls occurring north of Coos Bay, September 2002 and August 2003.

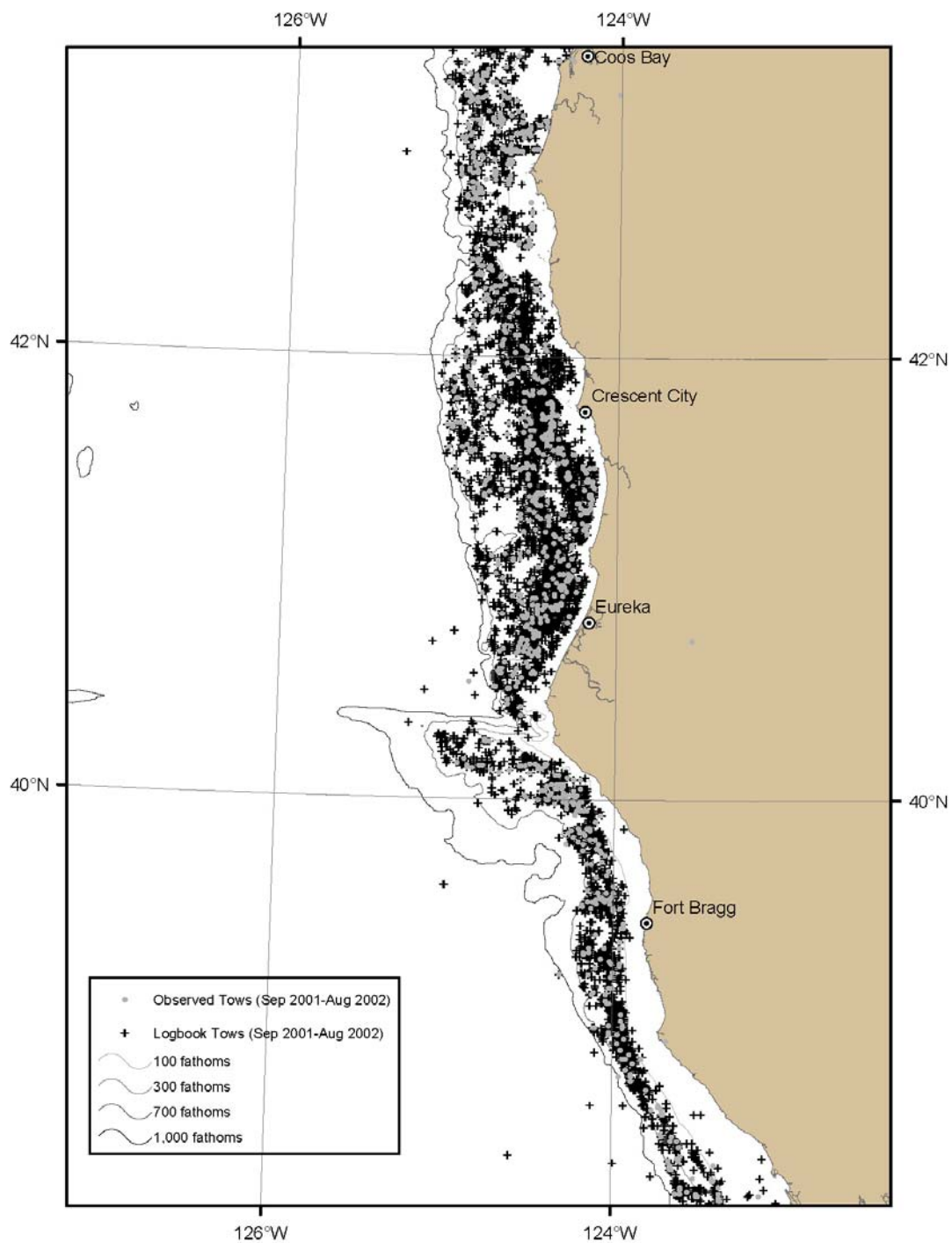


Figure 2a. Plot of locations for observed (●) and logbook (+) bottom trawls occurring south of Coos Bay and north of San Francisco, September 2001 and August 2002.

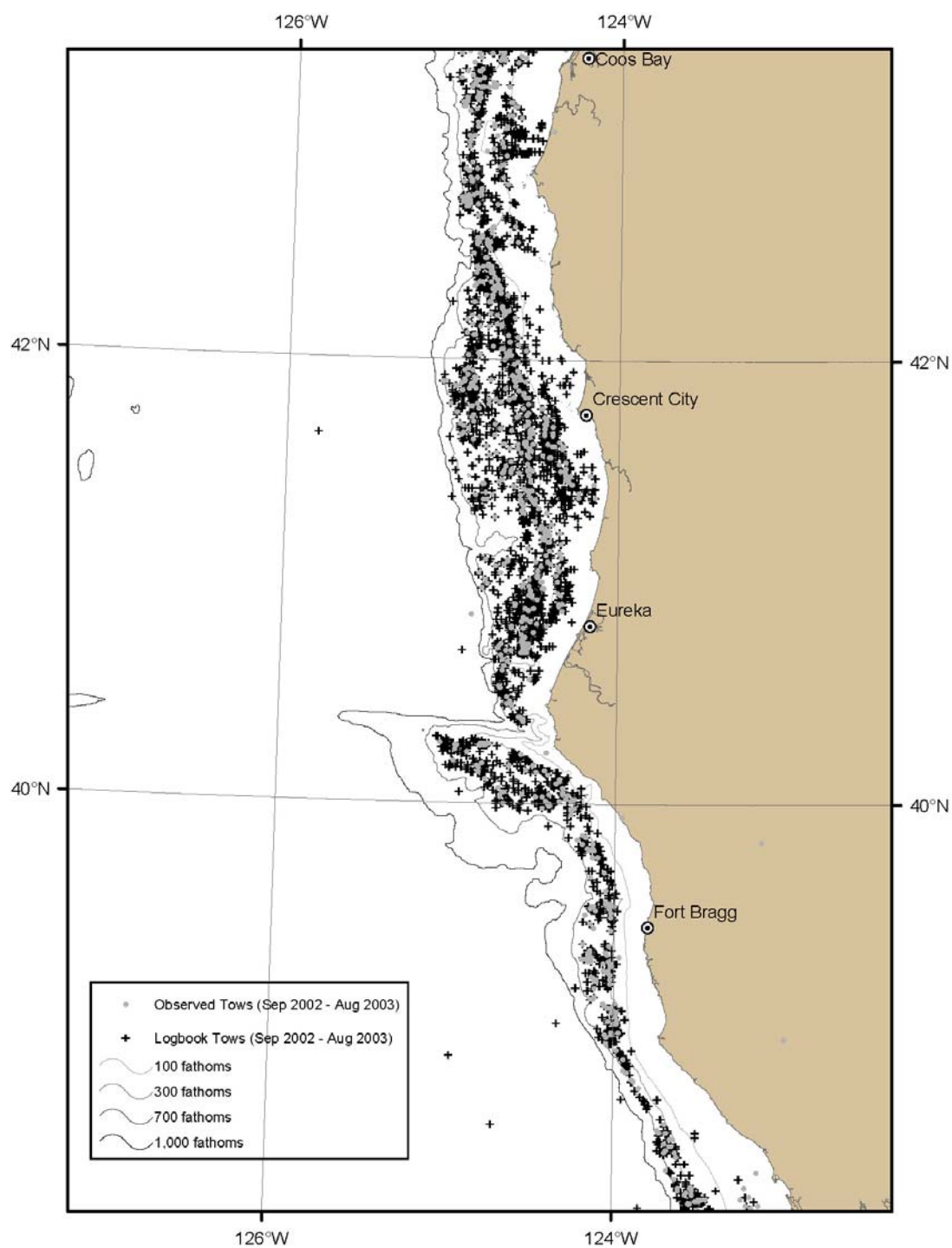


Figure 2b. Plot of locations for observed (●) and logbook (+) bottom trawls occurring south of Coos Bay and north of San Francisco, September 2002 and August 2003.

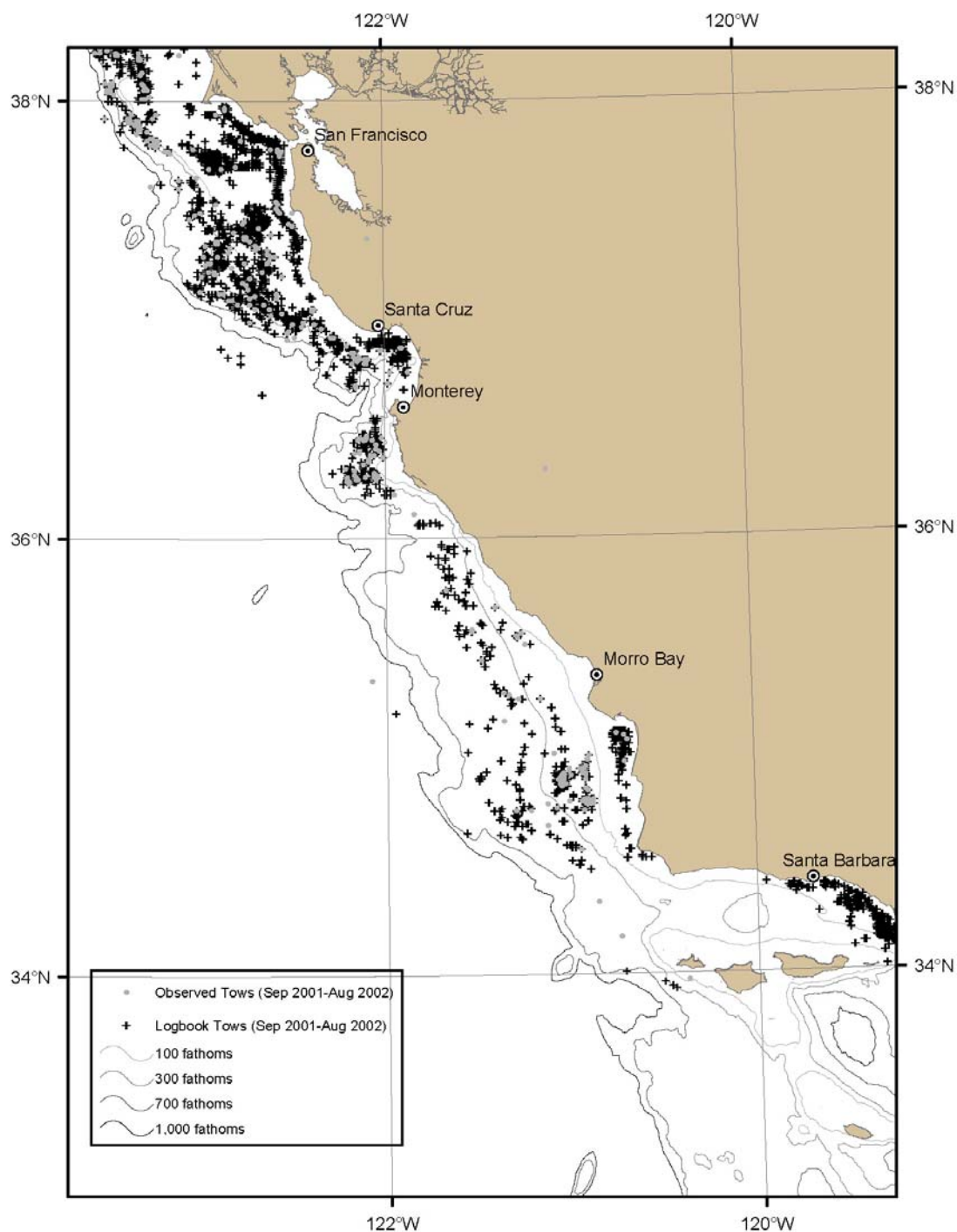


Figure 3a. Plot of locations for observed (●) and logbook (+) bottom trawls occurring south of San Francisco and north of Los Angeles, September 2001 and August 2002. (Because of the minimal number of trawl trips south of Santa Barbara, they were not included, in order to improve the resolution of the area shown.)

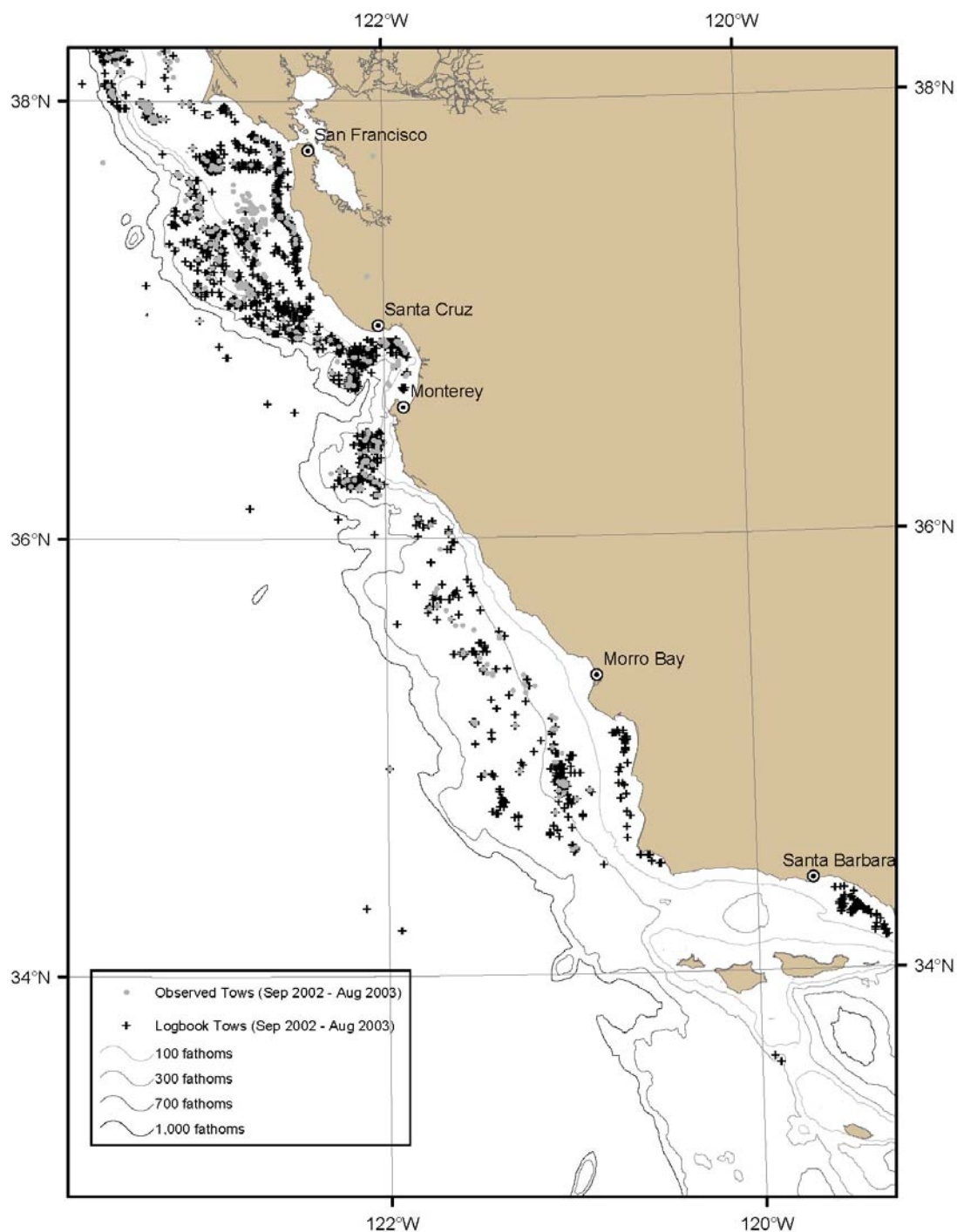


Figure 3b. Plot of locations for observed (●) and logbook (+) bottom trawls occurring south of San Francisco and north of Los Angeles, September 2002 and August 2003. (Because of the minimal number of trawl trips south of Santa Barbara, they were not included, in order to improve the resolution of the area shown.)

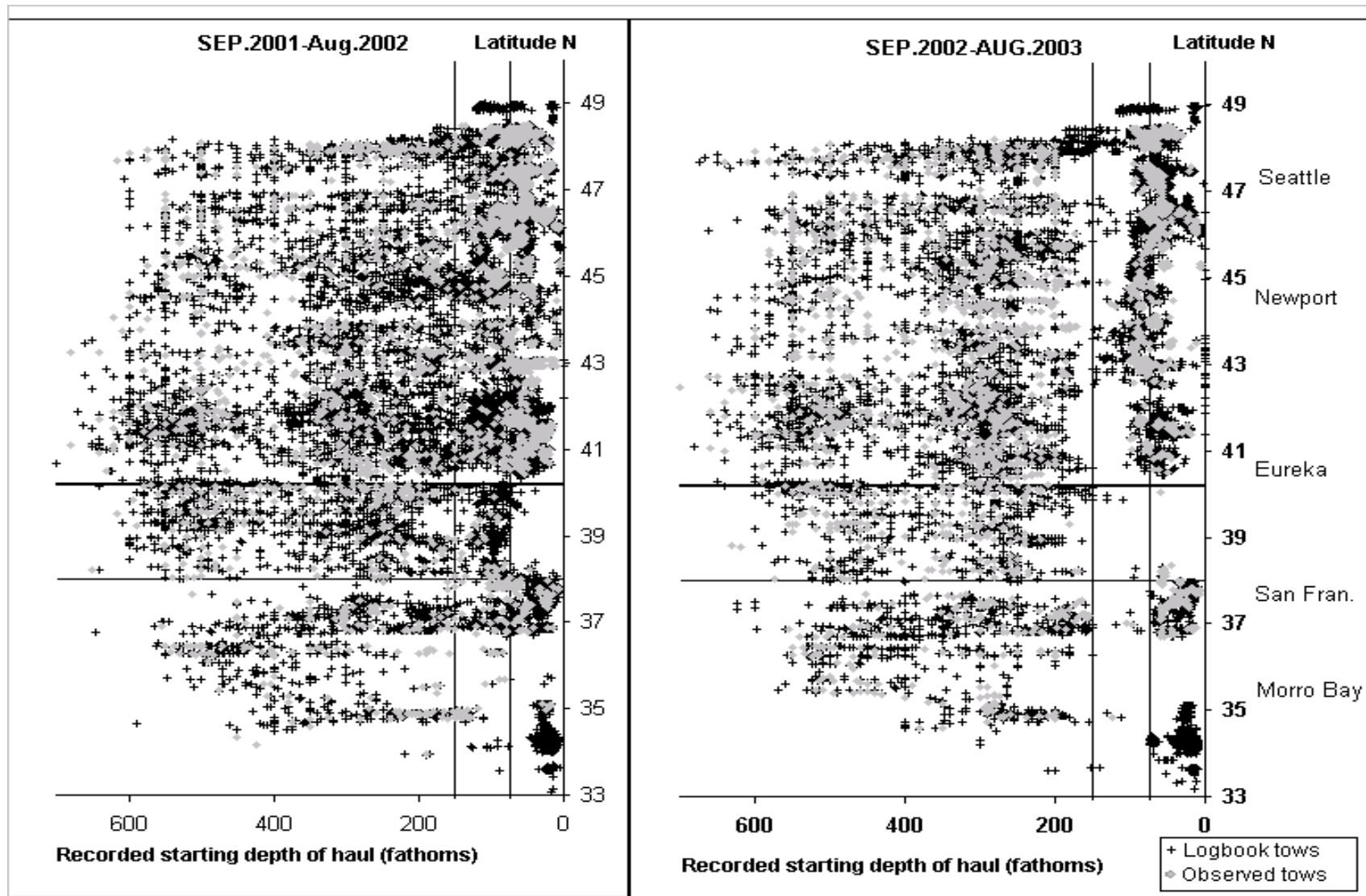


Figure 4. Plot of locations for observed (•) and logbook (+) bottom trawls occurring coastwide, September 2001 and August 2003.

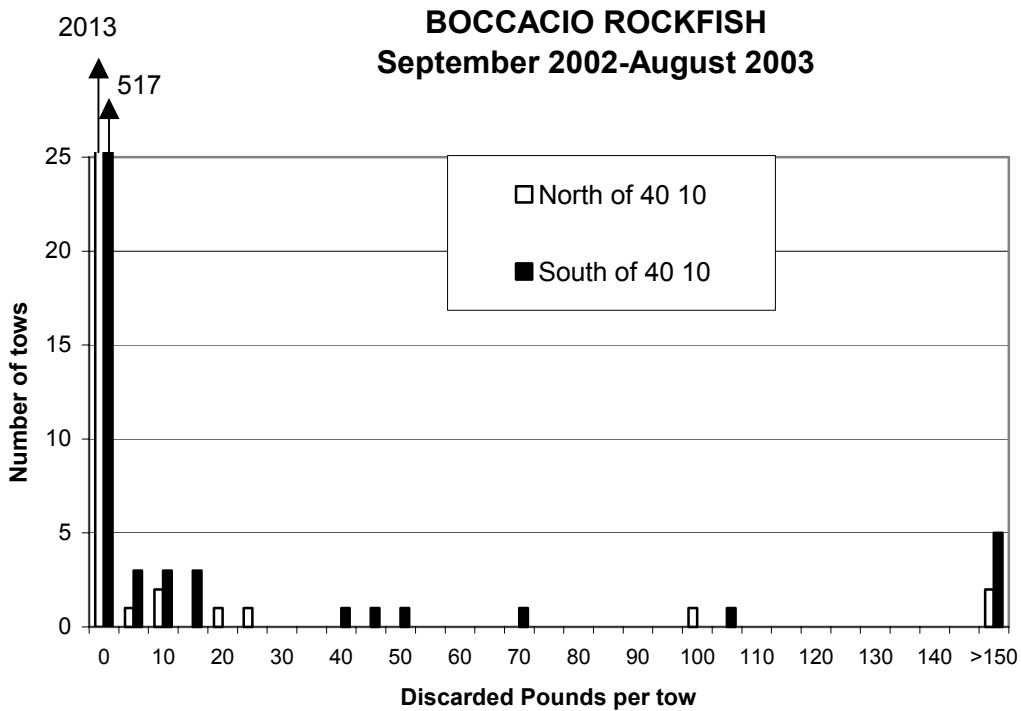
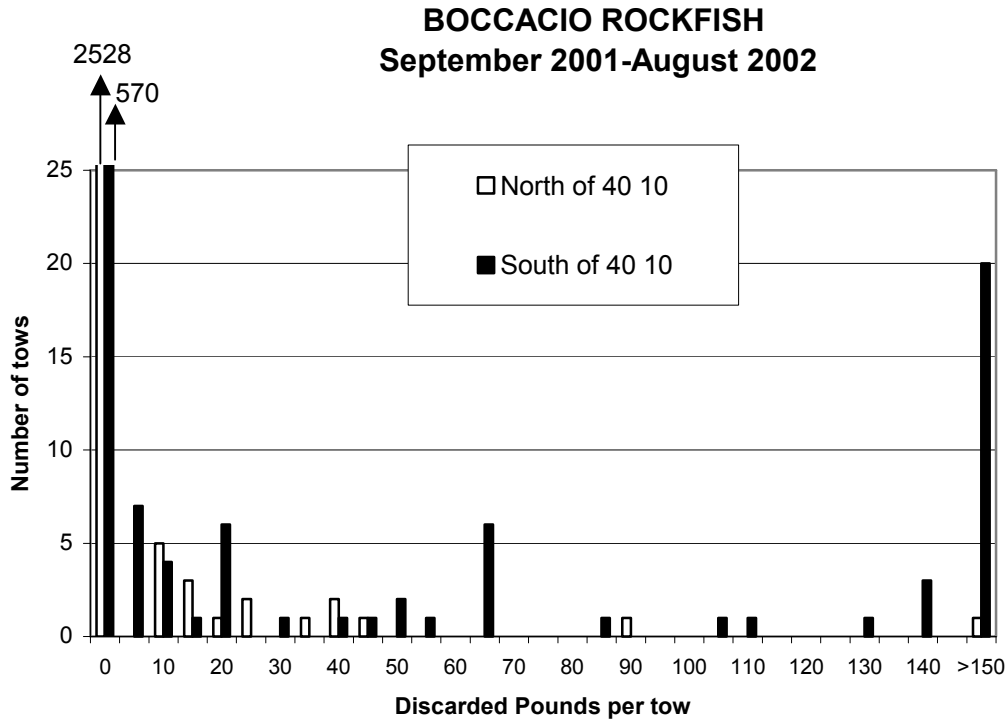


Figure 5 A. Bocaccio Rockfish- Histograms for discarded pounds (in number of tows) of bocaccio rockfish by year and area. (Does not include tows in an EFP or using Danish/Scottish seine or mid-water trawl)

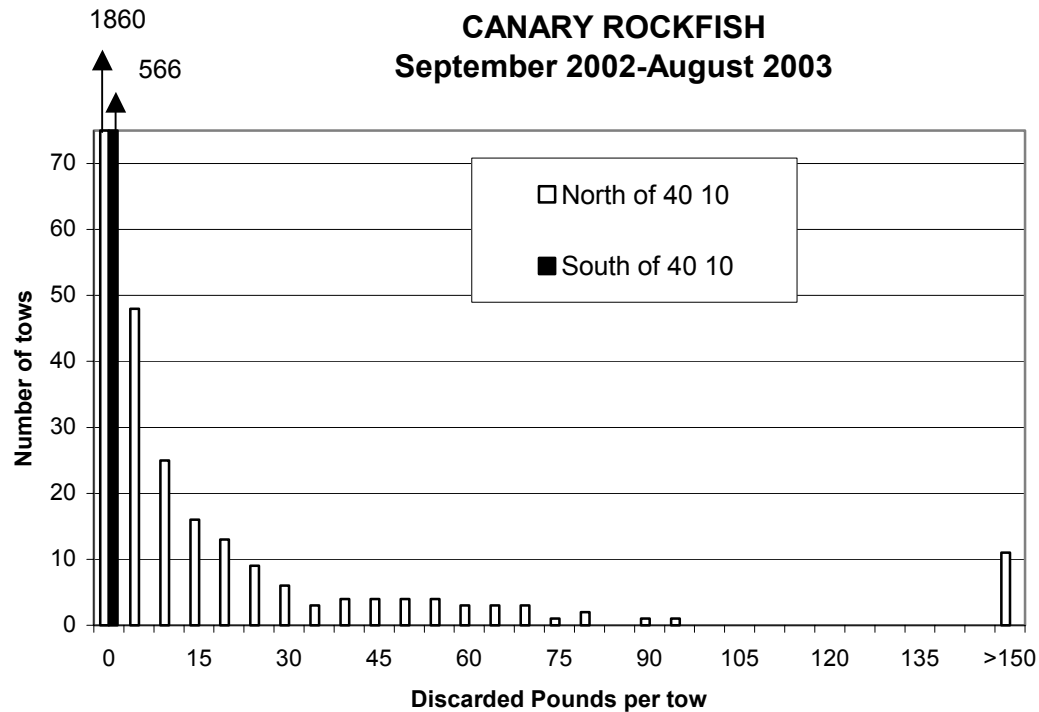
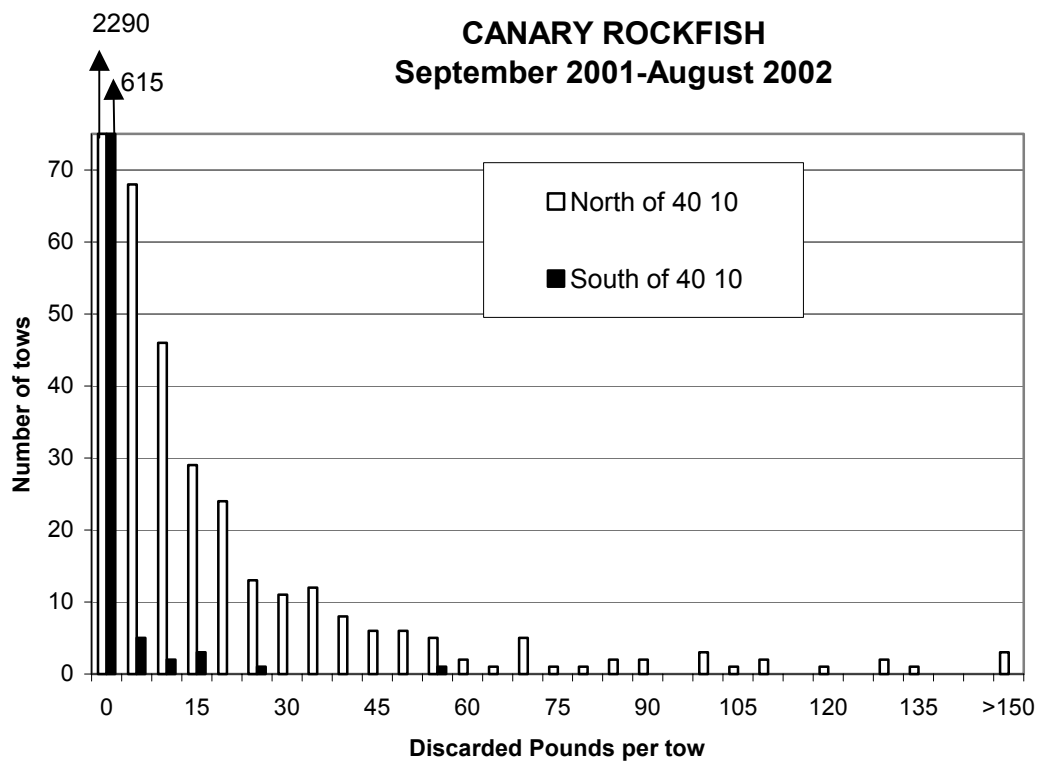


Figure 5 B. Canary Rockfish- Histograms for discarded pounds (in number of tows) of canary rockfish by year and area. (Does not include tows in an EFP or using Danish/Scottish seine or mid-water trawl)

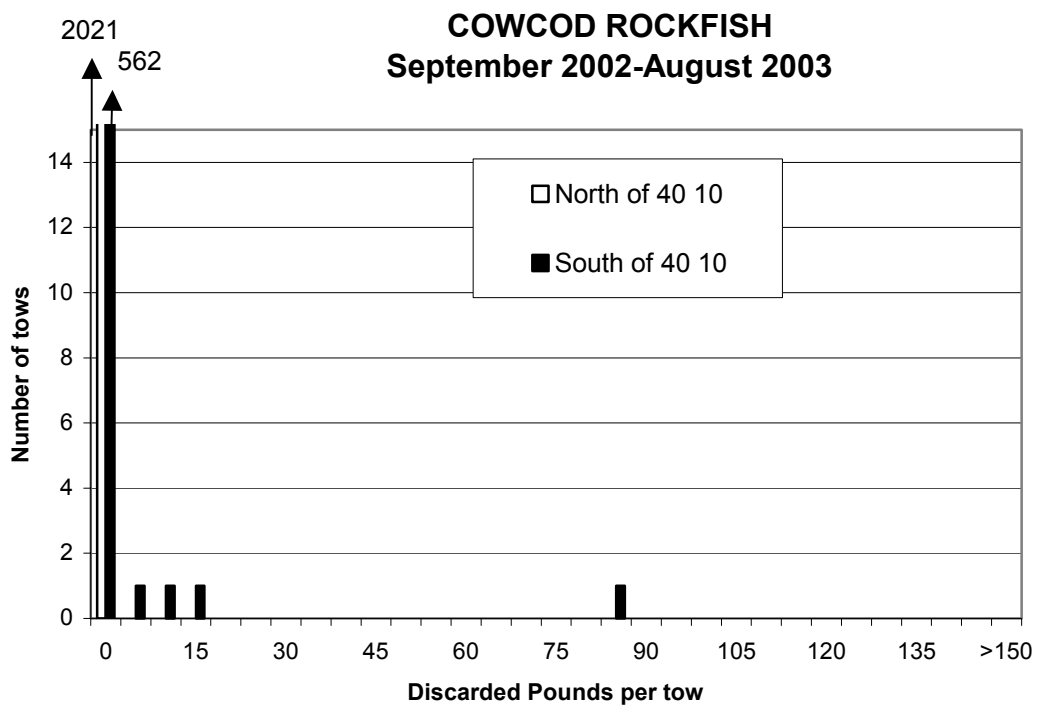
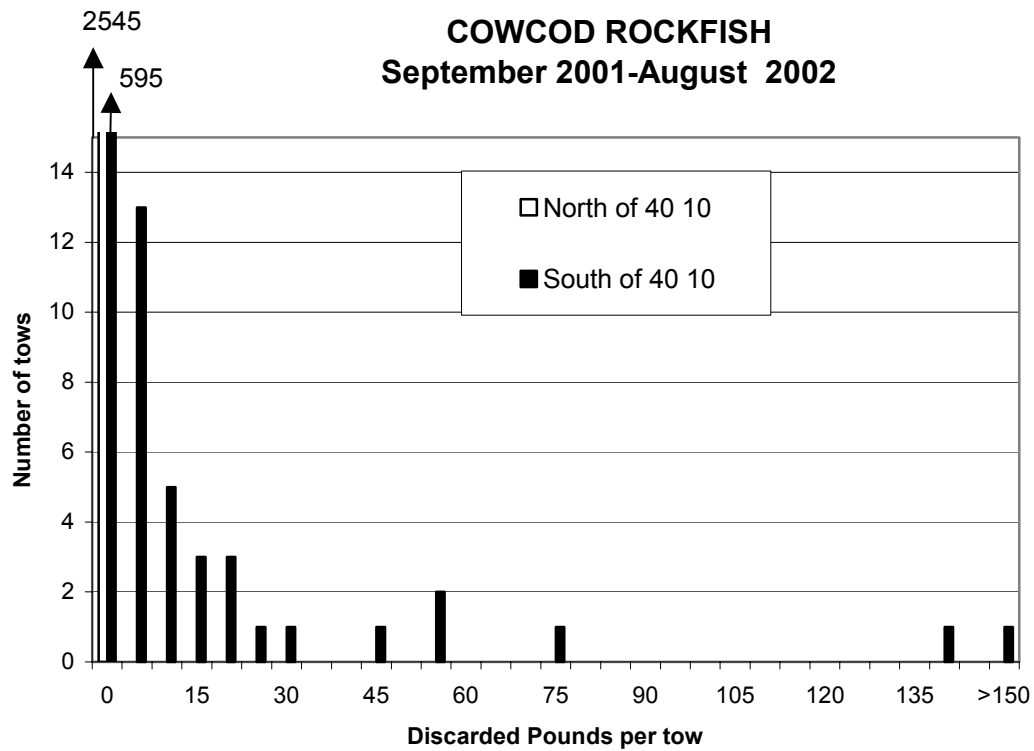


Figure 5 C. Cowcod Rockfish- Histograms for discarded pounds (in number of tows) of cowcod rockfish by year and area. (Does not include tows in an EFP or using Danish/Scottish seine or mid-water trawl)

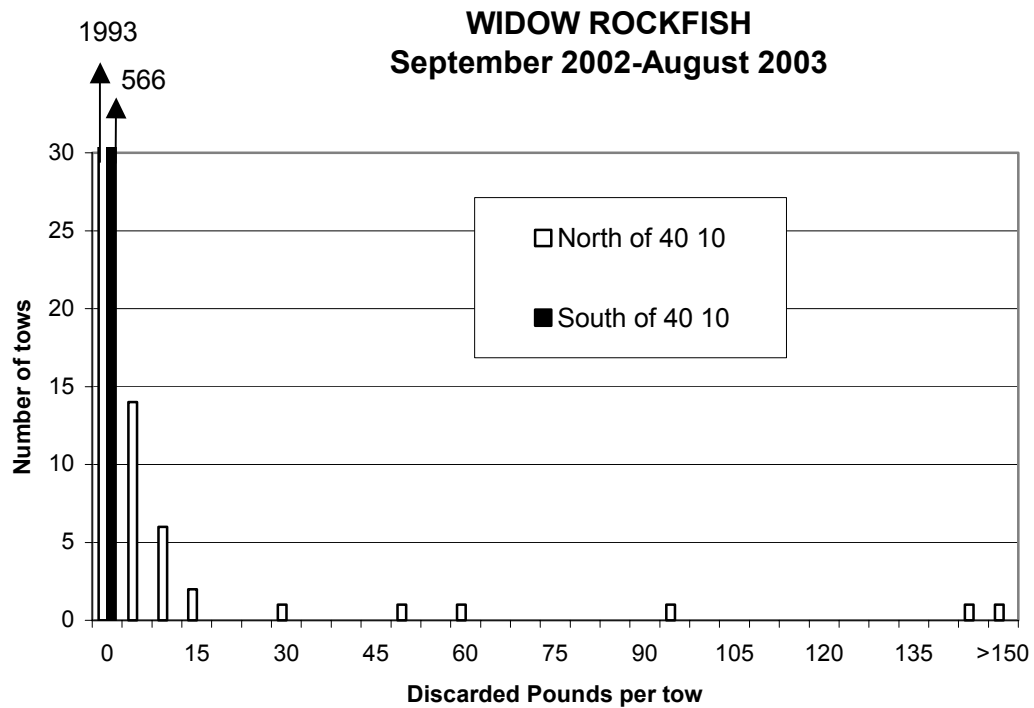
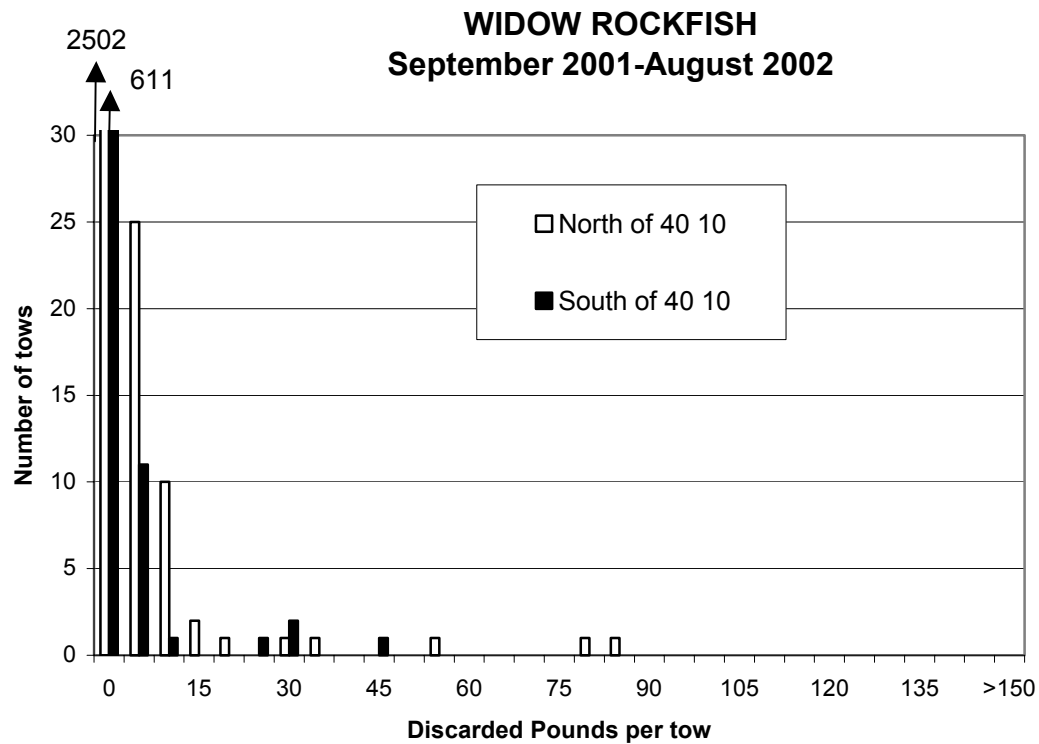


Figure 5 D. Widow Rockfish- Histograms for discarded pounds (in number of tows) of widow rockfish by year and area. (Does not include tows in an EFP or using Danish/Scottish seine or mid-water trawl)

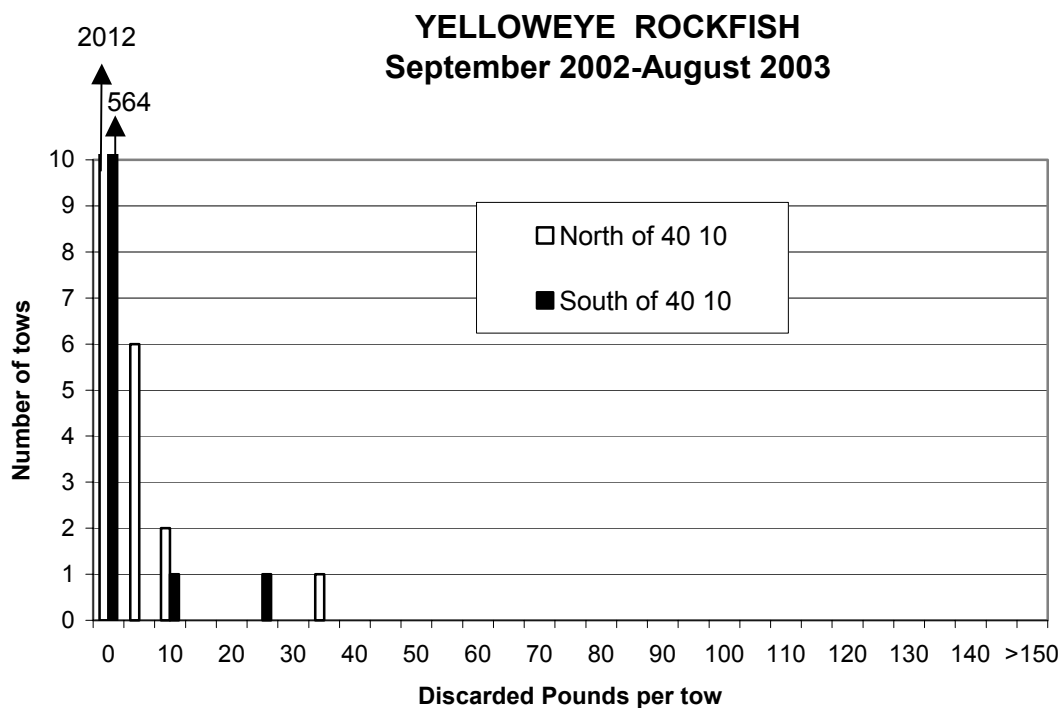
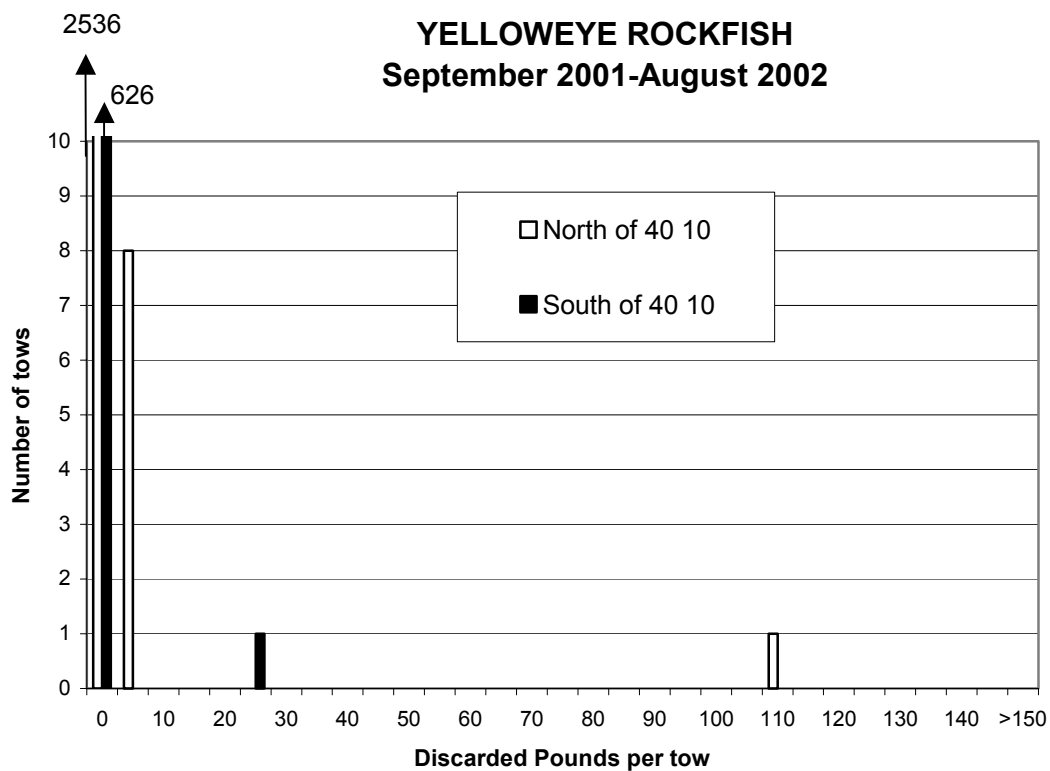


Figure 5 E. Yelloweye Rockfish- Histograms for discarded pounds (in number of tows) of yelloweye rockfish by year and area. (Does not include tows in an EFP or using Danish/Scottish seine or mid-water trawl)

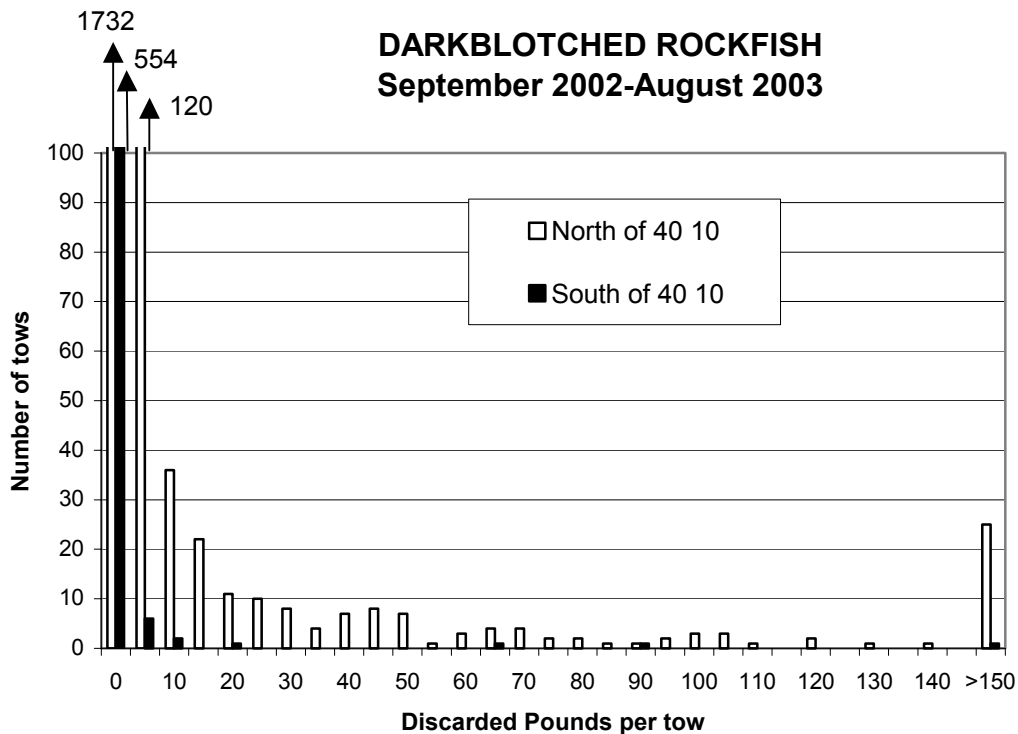
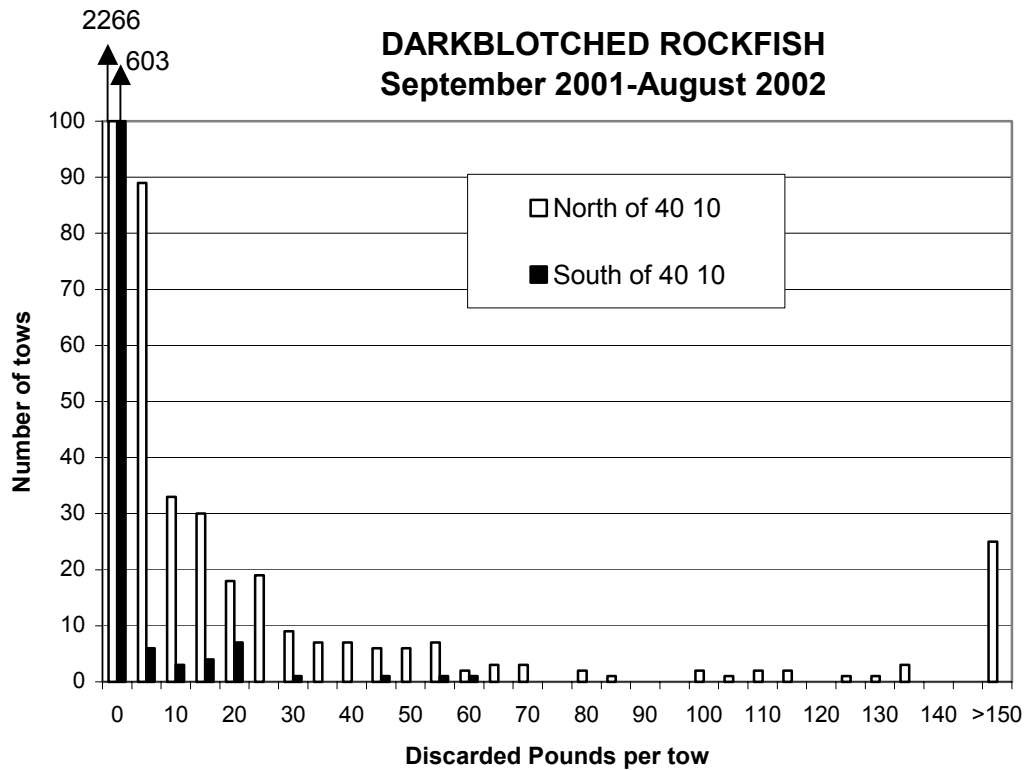


Figure 5 F. Darkblotched Rockfish- Histograms for discarded pounds (in number of tows) of darkblotched rockfish by year and area. (Does not include tows in an EFP or using Danish/Scottish seine or mid-water trawl)

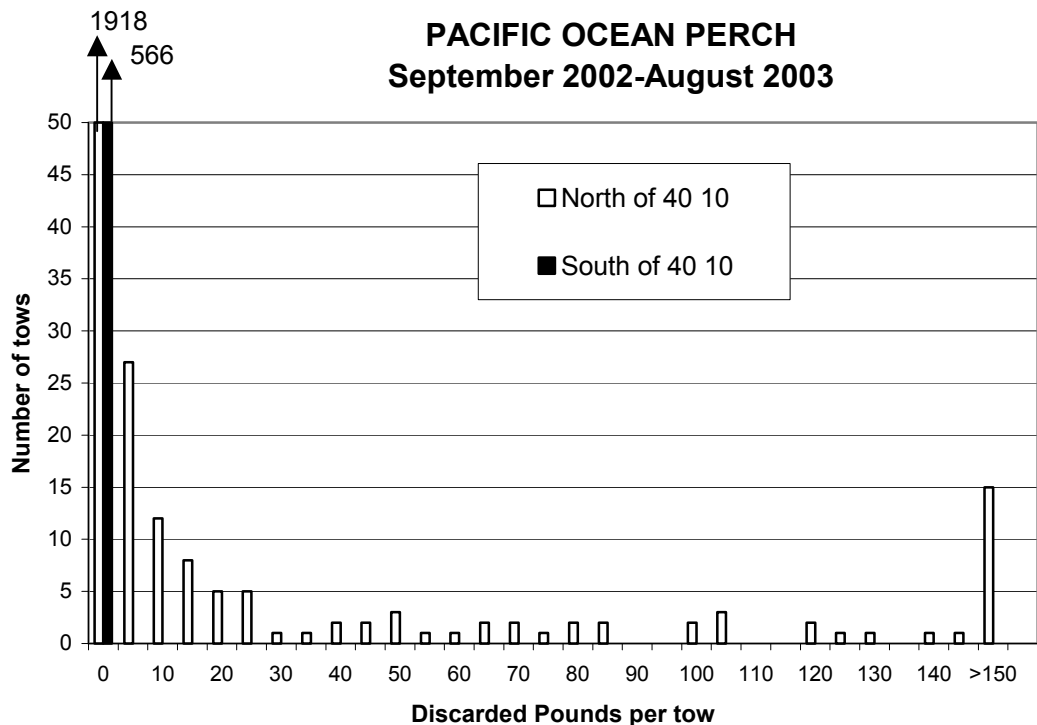
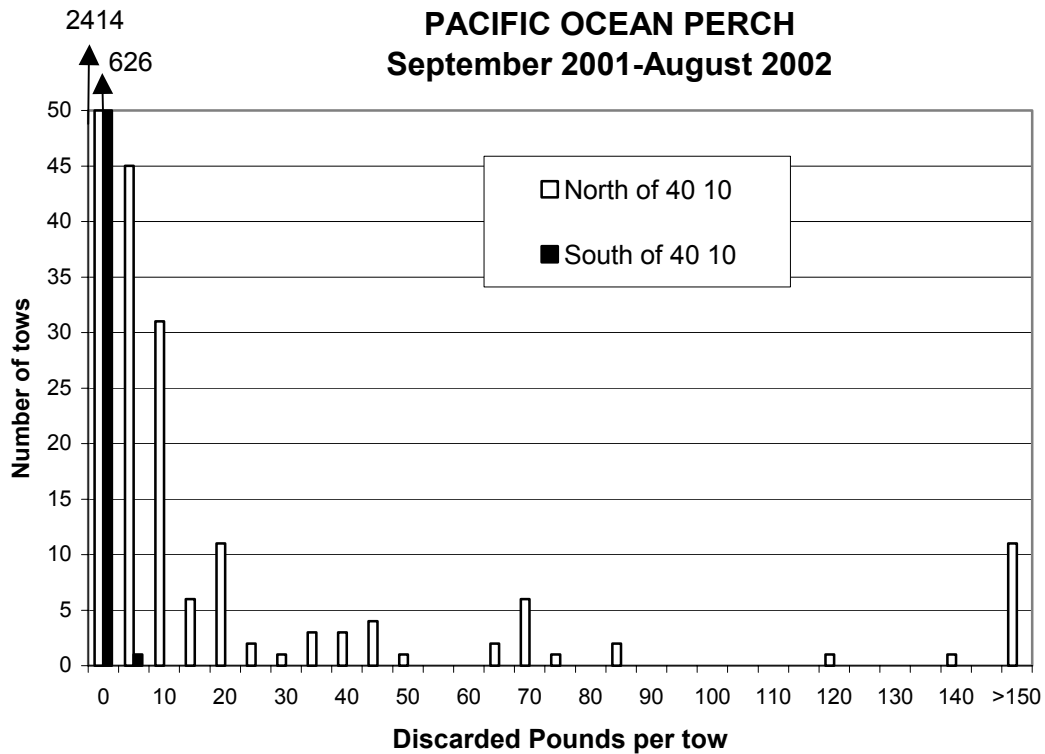


Figure 5 G. Pacific Ocean Perch- Histograms for discarded pounds (in number of tows) of Pacific Ocean Perch by year and area. (Does not include tows in an EFP or using Danish/Scottish seine or mid-water trawl)

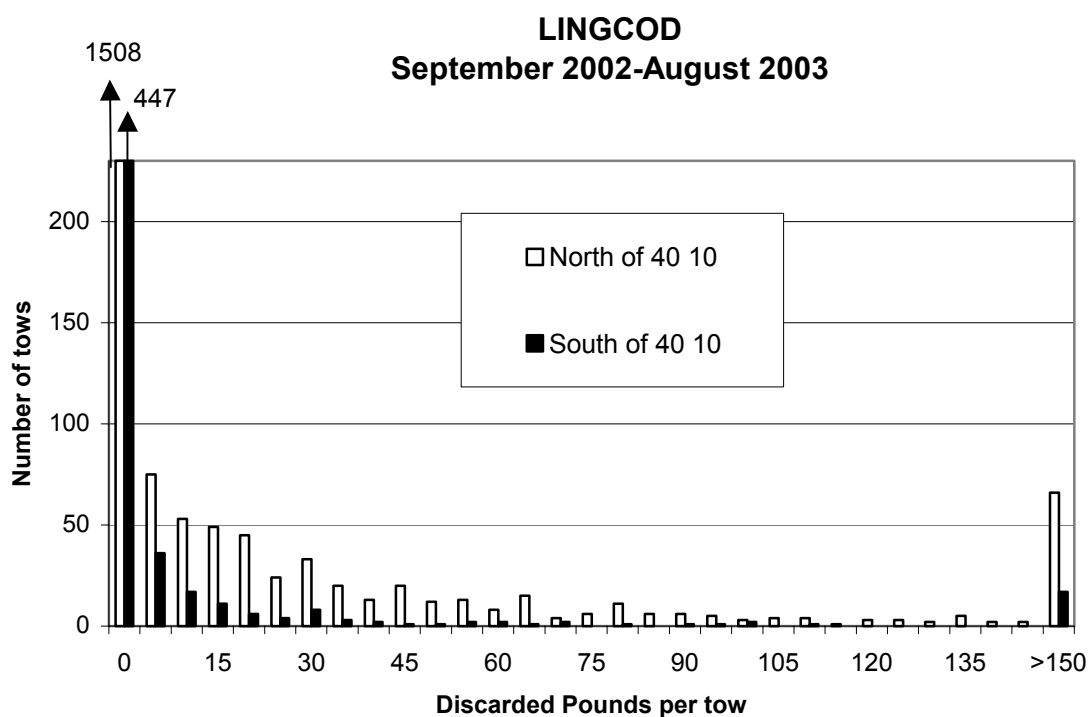
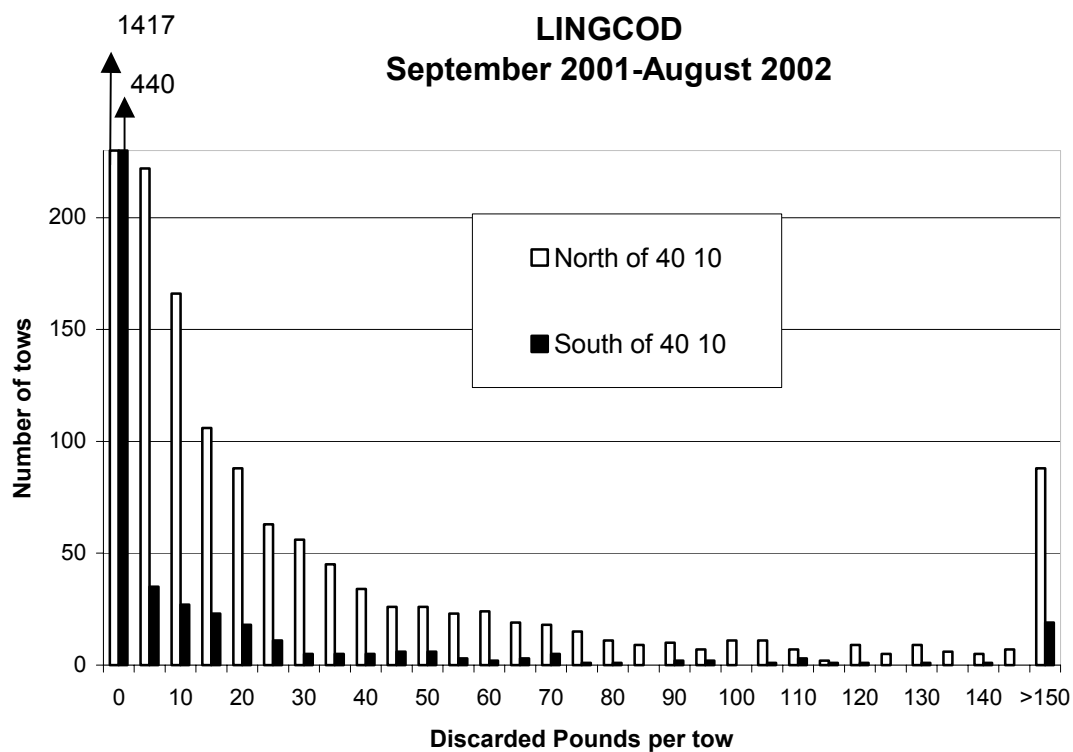


Figure 5 H. Lingcod- Histograms for discarded pounds (in number of tows) of lingcod by year and area. (Does not include tows in an EFP or using Danish/Scottish seine or mid-water trawl)

Table 1. Summary of observed and unobserved groundfish landings (in metric tons, mt) by observer-program year in which the data were collected and port group, for Limit Entry trawlers (excluding trips using Danish/Scottish seine and mid-water trawl).

Port Group in which landings were made	Unobserved trips		Observed trips		All trips
	Landed mts	Percent of all mts unobserved	Landed mts	Percent of all mts observed	Landed mts
Data collected from September 1, 2001 to August 31, 2002					
Puget Sound	4,497	89%	528	11%	5,025
Neah Bay	1,087	87%	160	13%	1,247
Astoria	3,176	83%	641	17%	3,817
Newport	1,400	87%	201	13%	1,601
Coos Bay	1,660	85%	285	15%	1,946
Crescent City	1,535	88%	215	12%	1,751
Eureka	1,484	88%	193	12%	1,677
Fort Bragg	1,682	87%	262	13%	1,944
San Francisco	519	77%	157	23%	675
Monterey	1,152	91%	119	9%	1,271
Morro Bay	525	84%	103	16%	629
Santa Barbara	79	100%			79
Los Angeles	5	100%			5
All port groups	18,802	87%	2,864	13%	21,666
Data collected from September 1, 2002 to August 31, 2003					
Puget Sound	3,855	88%	504	12%	4,360
Neah Bay	1,444	92%	128	8%	1,572
Astoria	3,476	79%	908	21%	4,384
Newport	1,622	78%	450	22%	2,072
Coos Bay	1,956	76%	625	24%	2,581
Crescent City	1,458	83%	292	17%	1,750
Eureka	1,545	86%	253	14%	1,798
Fort Bragg	1,479	87%	219	13%	1,697
San Francisco	538	87%	81	13%	619
Monterey	1,231	89%	154	11%	1,386
Morro Bay	729	87%	106	13%	835
Santa Barbara	56	100%			56
Los Angeles	0	100%			0
All port groups	19,387	84%	3,722	16%	23,109

Table 2. Number of trips sampled by observers during September 1, 2001 to August 31, 2002 by port group, observer-program year in which the data were collected, and 2-month period, for non-EFP Limited Entry trawlers (excluding trips using Danish/Scottish seine and mid-water trawl).

Port Group in which landings were made	2001				2002								Entire first year of data collection		
	Sept.-Oct.		Nov.-Dec.		Jan.-Feb.		March-April		May-June		July-August				
	Observed trips in each port group		Observed trips in each port group		Observed trips in each port group		Observed trips in each port group		Observed trips in each port group		Observed trips in each port group		Observed trips in each port group		
	number	% of tot.	number	% of tot.	number	% of tot.	number	% of tot.	number	% of tot.	number	% of tot.	number	% of tot.	
Data collected from September 1, 2001 to August 31, 2002															
Puget Sound	1	1%	2	4%	5	6%	5	4%	6	6%	8	6%	27	4%	
Neah Bay	6	6%	12	22%	6	7%	15	11%	12	11%	49	36%	100	16%	
Astoria	9	9%	11	20%	13	15%	18	13%	30	28%	14	10%	95	15%	
Newport	7	7%	5	9%	7	8%	11	8%	7	6%	1	1%	38	6%	
Coos Bay	8	8%	3	5%	8	9%	18	13%	12	11%	12	9%	61	10%	
Crecent City	6	6%	8	15%	8	9%	23	17%	11	10%	12	9%	68	11%	
Eureka	23	23%	2	4%	14	16%	12	9%	10	9%	10	7%	71	11%	
Fort Bragg					4	5%	10	7%	6	6%	19	14%	39	6%	
San Francisco	30	30%			7	8%	4	3%	1	1%	2	1%	44	7%	
Monterey	2	2%	10	18%	14	16%	14	10%	8	7%	10	7%	58	9%	
Morro Bay	7	7%	2	4%	2	2%	7	5%	5	5%			23	4%	
All port groups	99	100%	55	100%	88	100%	137	100%	108	100%	137	100%	624	100%	
														Entire second year of data collection	
	2002				2003										
	Sept.-Oct.		Nov.-Dec.		Jan.-Feb.		March-April		May-June		July-August				
Data collected from September 1, 2002 to August 31, 2003															
Puget Sound	1	1%	2	4%	1	1%	7	5%	11	8%	8	6%	30	5%	
Neah Bay	35	30%	6	13%	10	13%	10	8%	4	3%	2	1%	67	10%	
Astoria	15	13%	12	26%	6	8%	22	17%	27	19%	24	17%	106	16%	
Newport	6	5%	4	9%	8	11%	17	13%	15	11%	11	8%	61	9%	
Coos Bay	7	6%	6	13%	9	12%	18	14%	23	16%	23	16%	86	13%	
Crecent City	13	11%	1	2%	7	9%	14	11%	21	15%	4	3%	60	9%	
Eureka	7	6%	5	11%	1	1%	17	13%	11	8%	17	12%	58	9%	
Fort Bragg	6	5%	1	2%	6	8%	9	7%	7	5%	11	8%	40	6%	
San Francisco			2	4%	1	1%	9	7%	7	5%			19	3%	
Monterey	19	17%	5	11%	24	32%	6	5%	13	9%	38	27%	105	16%	
Morro Bay	6	5%	3	6%	3	4%			1	1%	2	1%	15	2%	
All port groups	115	100%	47	100%	76	100%	129	100%	140	100%	140	100%	647	100%	

Table 3. Number of observed hauls by area, depth (in fathoms, fm), observer-program year in which the data were collected, and 2-month period for non-EFP limit entry trawlers (excluding trips using Danish/Scottish seine and mid-water trawl).

Area / Depth group	2001				2002								Entire first year of data collection	
	Sept.-Oct.		Nov.-Dec.		Jan.-Feb.		March-April		May-June		July-August			
	Observed hauls in each depth group		Observed hauls in each depth group		Observed hauls in each depth group		Observed hauls in each depth group		Observed hauls in each depth group		Observed hauls in each depth group		Observed hauls in each depth group	
	number	% of tot.	number	% of tot.	number	% of tot.	number	% of tot.	number	% of tot.	number	% of tot.	number	% of tot.
Data collected from September 1, 2001 to August 31, 2002														
North of 40°10' N. lat. (near Cape Mendocino)														
< 75 fm	101	29%	91	52%	8	2%	147	24%	533	74%	495	73%	1,375	47%
75 - 150 fm	130	38%	60	34%	33	9%	145	23%	108	15%	136	20%	612	21%
>150 fm	112	33%	24	14%	327	89%	326	53%	79	11%	43	6%	911	31%
All depths	343	100%	175	100%	368	100%	618	100%	720	100%	674	100%	2,898	100%
South of 40°10' N. lat. (near Cape Mendocino)														
< 75 fm	106	58%	24	50%	66	42%	42	28%	4	5%	2	1%	244	31%
75 - 150 fm	60	33%	14	29%	19	12%	10	7%	19	22%	1	1%	123	15%
>150 fm	16	9%	10	21%	72	46%	96	65%	62	73%	172	98%	428	54%
All depths	182	100%	48	100%	157	100%	148	100%	85	100%	175	100%	795	100%
Coastwide														
< 75 fm	207	39%	115	52%	74	14%	189	25%	537	67%	497	59%	1,619	44%
75 - 150 fm	190	36%	74	33%	52	10%	155	20%	127	16%	137	16%	735	20%
>150 fm	128	24%	34	15%	399	76%	422	55%	141	18%	215	25%	1,339	36%
All depths	525	100%	223	100%	525	100%	766	100%	805	100%	849	100%	3,693	100%
	2002				2003								Entire second year of data collection	
	Sept.-Oct.		Nov.-Dec.		Jan.-Feb.		March-April		May-June		July-August			
	Data collected from September 1, 2002 to August 31, 2003													
North of 40°10' N. lat. (near Cape Mendocino)														
< 75 fm	201	50%	65	30%	4	2%	194	30%	419	47%	425	55%	1,308	42%
75 - 150 fm	44	11%	32	15%	27	13%	153	23%	128	14%	124	16%	508	16%
>150 fm	156	39%	117	55%	179	85%	309	47%	349	39%	221	29%	1,331	42%
All depths	401	100%	214	100%	210	100%	656	100%	896	100%	770	100%	3,147	100%
South of 40°10' N. lat. (near Cape Mendocino)														
< 75 fm	15	14%			65	49%	51	50%	71	49%	84	56%	286	40%
75 - 150 fm			3	4%									3	0%
>150 fm	92	86%	70	96%	68	51%	51	50%	75	51%	65	44%	421	59%
All depths	107	100%	73	100%	133	100%	102	100%	146	100%	149	100%	710	100%
Coastwide														
< 75 fm	216	43%	65	23%	69	20%	245	32%	490	47%	509	55%	1,594	41%
75 - 150 fm	44	9%	35	12%	27	8%	153	20%	128	12%	124	13%	511	13%
>150 fm	248	49%	187	65%	247	72%	360	47%	424	41%	286	31%	1,752	45%
All depths	508	100%	287	100%	343	100%	758	100%	1042	100%	919	100%	3,857	100%

Table 4. Discarded, retained and total catches (in pounds) for 23 groundfish species or species groups by area, depth (in fathoms, fm), and observer-program year in which the data were collected (excluding EFP trips and those using Danish/Scottish seine and mid-water trawl).

		North of 40°10' N. lat.			South of 40°10' N. lat.			Coastwide		
Depth group	Disposition of fish	Pounds of species	Percent of depth group	Percent of disposition type (all depths)	Pounds of species	Percent of depth group	Percent of disposition type (all depths)	Pounds of species	Percent of depth group	Percent of disposition type (all depths)
A. Bocaccio Rockfish										
Data collected from September 1, 2001 to August 31, 2002										
< 75 fm	Discarded	102	82%	14%	522	41%	5%	625	44%	5%
	Retained	22	18%	27%	758	59%	24%	780	56%	24%
	Total catch	124	100%	15%	1,280	100%	9%	1,404	100%	9%
75 - 150 fm	Discarded	476	90%	64%	9,394	82%	84%	9,870	82%	83%
	Retained	55	10%	69%	2,103	18%	68%	2,158	18%	68%
	Total catch	531	100%	65%	11,498	100%	80%	12,029	100%	80%
>150 fm	Discarded	164	99%	22%	1,272	84%	11%	1,436	85%	12%
	Retained	2	1%	3%	246	16%	8%	248	15%	8%
	Total catch	167	100%	20%	1,518	100%	11%	1,685	100%	11%
All depths	Discarded	743	90%	100%	11,188	78%	100%	11,931	79%	100%
	Retained	80	10%	100%	3,107	22%	100%	3,187	21%	100%
	Total catch	822	100%	100%	14,295	100%	100%	15,118	100%	100%
Data collected from September 1, 2002 to August 31, 2003										
< 75 fm	Discarded				245	100%	11%	245	100%	9%
	Retained									
	Total catch				245	100%	11%	245	100%	9%
75 - 150 fm	Discarded	42	100%	9%	15	100%	1%	57	100%	2%
	Retained									
	Total catch	42	100%	9%	15	100%	1%	57	100%	2%
>150 fm	Discarded	440	100%	91%	1,917	100%	88%	2,357	100%	89%
	Retained									
	Total catch	440	100%	91%	1,917	100%	88%	2,357	100%	89%
All depths	Discarded	483	100%	100%	2,176	100%	100%	2,659	100%	100%
	Retained									
	Total catch	483	100%	100%	2,176	100%	100%	2,659	100%	100%
B. Canary Rockfish										
Data collected from September 1, 2001 to August 31, 2002										
< 75 fm	Discarded	2,509	39%	39%	2	1%	2%	2,512	38%	38%
	Retained	3,898	61%	54%	186	99%	32%	4,084	62%	52%
	Total catch	6,407	100%	47%	189	100%	26%	6,596	100%	46%
75 - 150 fm	Discarded	3,871	55%	60%	62	14%	44%	3,933	53%	60%
	Retained	3,111	45%	43%	384	86%	67%	3,494	47%	45%
	Total catch	6,981	100%	51%	446	100%	62%	7,427	100%	52%
>150 fm	Discarded	22	8%	0%	77	95%	55%	100	27%	2%
	Retained	262	92%	4%	4	5%	1%	266	73%	3%
	Total catch	284	100%	2%	81	100%	11%	366	100%	3%
All depths	Discarded	6,402	47%	100%	142	20%	100%	6,544	45%	100%
	Retained	7,270	53%	100%	574	80%	100%	7,844	55%	100%
	Total catch	13,673	100%	100%	716	100%	100%	14,388	100%	100%
Data collected from September 1, 2002 to August 31, 2003										
< 75 fm	Discarded	1,127	41%	19%				1,127	41%	19%
	Retained	1,614	59%	46%	2	100%	100%	1,616	59%	46%
	Total catch	2,741	100%	29%	2	100%	75%	2,743	100%	29%
75 - 150 fm	Discarded	4,685	72%	79%	1	100%	100%	4,685	72%	79%
	Retained	1,804	28%	52%				1,804	28%	52%
	Total catch	6,488	100%	69%	1	100%	25%	6,489	100%	69%
>150 fm	Discarded	105	56%	2%				105	56%	2%
	Retained	81	44%	2%				81	44%	2%
	Total catch	186	100%	2%				186	100%	2%
All depths	Discarded	5,916	63%	100%	1	25%	100%	5,917	63%	100%
	Retained	3,499	37%	100%	2	75%	100%	3,501	37%	100%
	Total catch	9,416	100%	100%	2	100%	100%	9,418	100%	100%

Table 4 (cont.). Discarded, retained and total catches (in pounds) for 23 groundfish species or species groups by area, depth (in fathoms, fm), and observer-program year in which the data were collected (excluding EFP trips and those using Danish/Scottish seine and mid-water trawl).

Depth group / Disposition of fish		North of 40°10' N. lat.			South of 40°10' N. lat.			Coastwide		
		Pounds of species	Percent of depth group	Percent of disposition type (all depths)	Pounds of species	Percent of depth group	Percent of disposition type (all depths)	Pounds of species	Percent of depth group	Percent of disposition type (all depths)
C. Cowcod Rockfish										
Data collected from September 1, 2001 to August 31, 2002										
< 75 fm	Discarded				17	100%	2%	17	100%	2%
	Retained									
	Total catch				17	100%	2%	17	100%	2%
75 - 150 fm	Discarded				680	100%	84%	680	99%	84%
	Retained	4	100%	100%				4	1%	100%
	Total catch	4	100%	100%	680	100%	84%	684	100%	84%
>150 fm	Discarded				117	100%	14%	117	100%	14%
	Retained									
	Total catch				117	100%	14%	117	100%	14%
All depths	Discarded				815	100%	100%	815	100%	100%
	Retained	4	100%	100%				4	0%	100%
	Total catch	4	100%	100%	815	100%	100%	819	100%	100%
Data collected from September 1, 2002 to August 31, 2003										
< 75 fm	Discarded				24	100%	22%	24	100%	22%
	Retained									
	Total catch				24	100%	22%	24	100%	22%
75 - 150 fm	Discarded				85	100%	78%	85	100%	78%
	Retained									
	Total catch				85	100%	78%	85	100%	78%
>150 fm	Discarded									
	Retained									
	Total catch									
All depths	Discarded				109	100%	100%	109	100%	100%
	Retained									
	Total catch				109	100%	100%	109	100%	100%
D. Widow Rockfish										
Data collected from September 1, 2001 to August 31, 2002										
< 75 fm	Discarded	92	10%	19%				92	10%	14%
	Retained	809	90%	5%	2	100%	1%	811	90%	5%
	Total catch	902	100%	5%	2	100%	0%	903	100%	5%
75 - 150 fm	Discarded	214	1%	44%	39	17%	24%	253	2%	39%
	Retained	16,034	99%	95%	194	83%	91%	16,227	98%	95%
	Total catch	16,248	100%	94%	232	100%	62%	16,481	100%	93%
>150 fm	Discarded	180	79%	37%	124	87%	76%	304	82%	47%
	Retained	48	21%	0%	18	13%	9%	66	18%	0%
	Total catch	228	100%	1%	143	100%	38%	371	100%	2%
All depths	Discarded	487	3%	100%	163	43%	100%	650	4%	100%
	Retained	16,891	97%	100%	214	57%	100%	17,104	96%	100%
	Total catch	17,377	100%	100%	377	100%	100%	17,754	100%	100%
Data collected from September 1, 2002 to August 31, 2003										
< 75 fm	Discarded	76	83%	10%				76	83%	10%
	Retained	16	17%	4%				16	17%	4%
	Total catch	91	100%	8%				91	100%	8%
75 - 150 fm	Discarded	172	83%	24%				172	83%	24%
	Retained	36	17%	10%				36	17%	10%
	Total catch	207	100%	19%				207	100%	19%
>150 fm	Discarded	478	60%	66%				478	60%	66%
	Retained	317	40%	86%				317	40%	86%
	Total catch	795	100%	73%				795	100%	73%
All depths	Discarded	725	66%	100%				725	66%	100%
	Retained	368	34%	100%				368	34%	100%
	Total catch	1,093	100%	100%				1,093	100%	100%

Table 4 (cont.). Discarded, retained and total catches (in pounds) for 23 groundfish species or species groups by area, depth (in fathoms, fm), and observer-program year in which the data were collected (excluding EFP trips and those using Danish/Scottish seine and mid-water trawl).

Depth group / Disposition of fish		North of 40°10' N. lat.			South of 40°10' N. lat.			Coastwide		
		Pounds of species	Percent of depth group	Percent of disposition type (all depths)	Pounds of species	Percent of depth group	Percent of disposition type (all depths)	Pounds of species	Percent of depth group	Percent of disposition type (all depths)
E. Yelloweye Rockfish										
Data collected from September 1, 2001 to August 31, 2002										
< 75 fm	Discarded	9	26%	7%				9	26%	6%
	Retained	25	74%	46%				25	74%	46%
	Total catch	33	100%	18%				33	100%	16%
75 - 150 fm	Discarded	116	80%	88%				116	80%	74%
	Retained	29	20%	54%				29	20%	54%
	Total catch	145	100%	78%				145	100%	69%
>150 fm	Discarded	8	100%	6%	24	100%	100%	32	100%	20%
	Retained									
	Total catch	8	100%	4%	24	100%	100%	32	100%	15%
All depths	Discarded	132	71%	100%	24	100%	100%	157	74%	100%
	Retained	54	29%	100%				54	26%	100%
	Total catch	186	100%	100%	24	100%	100%	211	100%	100%
Data collected from September 1, 2002 to August 31, 2003										
< 75 fm	Discarded	67	74%	90%	31	100%	100%	97	80%	93%
	Retained	24	26%	66%				24	20%	66%
	Total catch	90	100%	82%	31	100%	100%	121	100%	86%
75 - 150 fm	Discarded	3	22%	5%				3	22%	3%
	Retained	12	78%	34%				12	78%	34%
	Total catch	16	100%	14%				16	100%	11%
>150 fm	Discarded	4	100%	5%				4	100%	4%
	Retained									
	Total catch	4	100%	3%				4	100%	3%
All depths	Discarded	74	67%	100%	31	100%	100%	104	74%	100%
	Retained	36	33%	100%				36	26%	100%
	Total catch	110	100%	100%	31	100%	100%	140	100%	100%
F. Darkblotched Rockfish										
Data collected from September 1, 2001 to August 31, 2002										
< 75 fm	Discarded	645	40%	3%				645	40%	3%
	Retained	981	60%	5%				981	60%	5%
	Total catch	1,627	100%	4%				1,627	100%	4%
75 - 150 fm	Discarded	9,850	62%	51%	192	95%	46%	10,043	63%	51%
	Retained	5,933	38%	32%	10	5%	1%	5,943	37%	29%
	Total catch	15,784	100%	42%	203	100%	10%	15,986	100%	40%
>150 fm	Discarded	8,758	43%	45%	222	13%	54%	8,980	40%	46%
	Retained	11,815	57%	63%	1,518	87%	99%	13,333	60%	66%
	Total catch	20,573	100%	54%	1,739	100%	90%	22,312	100%	56%
All depths	Discarded	19,254	51%	100%	414	21%	100%	19,668	49%	100%
	Retained	18,729	49%	100%	1,528	79%	100%	20,257	51%	100%
	Total catch	37,983	100%	100%	1,942	100%	100%	39,925	100%	100%
Data collected from September 1, 2002 to August 31, 2003										
< 75 fm	Discarded	613	93%	3%	2	100%	0%	615	93%	3%
	Retained	44	7%	0%				44	7%	0%
	Total catch	657	100%	2%	2	100%	0%	659	100%	2%
75 - 150 fm	Discarded	2,878	86%	15%				2,878	86%	15%
	Retained	467	14%	4%				467	14%	4%
	Total catch	3,345	100%	11%				3,345	100%	10%
>150 fm	Discarded	15,636	57%	82%	590	41%	100%	16,225	56%	82%
	Retained	11,814	43%	96%	861	59%	100%	12,675	44%	96%
	Total catch	27,450	100%	87%	1,451	100%	100%	28,901	100%	88%
All depths	Discarded	19,127	61%	100%	591	41%	100%	19,718	60%	100%
	Retained	12,325	39%	100%	861	59%	100%	13,185	40%	100%
	Total catch	31,452	100%	100%	1,452	100%	100%	32,904	100%	100%

Table 4 (cont.). Discarded, retained and total catches (in pounds) for 23 groundfish species or species groups by area, depth (in fathoms, fm), and observer-program year in which the data were collected (excluding EFP trips and those using Danish/Scottish seine and mid-water trawl).

Depth group / Disposition of fish		North of 40°10' N. lat.			South of 40°10' N. lat.			Coastwide		
		Pounds of species	Percent of depth group	Percent of disposition type (all depths)	Pounds of species	Percent of depth group	Percent of disposition type (all depths)	Pounds of species	Percent of depth group	Percent of disposition type (all depths)
G. Pacific Ocean Perch										
Data collected from September 1, 2001 to August 31, 2002										
< 75 fm	Discarded	75	11%	1%				75	11%	1%
	Retained	632	89%	1%				632	89%	1%
	Total catch	707	100%	1%				707	100%	1%
75 - 150 fm	Discarded	3,704	13%	58%				3,704	13%	58%
	Retained	24,420	87%	53%				24,420	87%	53%
	Total catch	28,124	100%	54%				28,124	100%	54%
>150 fm	Discarded	2,643	11%	41%	1	100%	100%	2,644	11%	41%
	Retained	20,827	89%	45%				20,827	89%	45%
	Total catch	23,470	100%	45%	1	100%	100%	23,471	100%	45%
All depths	Discarded	6,422	12%	100%	1	100%	100%	6,423	12%	100%
	Retained	45,879	88%	100%				45,879	88%	100%
	Total catch	52,300	100%	100%	1	100%	100%	52,302	100%	100%
Data collected from September 1, 2002 to August 31, 2003										
< 75 fm	Discarded	5	100%	0%				5	100%	0%
	Retained									
	Total catch	5	100%	0%				5	100%	0%
75 - 150 fm	Discarded	48	8%	1%				48	8%	1%
	Retained	524	92%	2%				524	92%	2%
	Total catch	572	100%	2%				572	100%	2%
>150 fm	Discarded	5,347	16%	99%				5,347	16%	99%
	Retained	28,983	84%	98%				28,983	84%	98%
	Total catch	34,330	100%	98%				34,330	100%	98%
All depths	Discarded	5,394	15%	100%				5,394	15%	100%
	Retained	29,512	85%	100%				29,512	85%	100%
	Total catch	34,907	100%	100%				34,907	100%	100%
H. Lingcod										
Data collected from September 1, 2001 to August 31, 2002										
< 75 fm	Discarded	29,292	73%	51%	1,426	54%	9%	30,718	72%	42%
	Retained	11,038	27%	51%	1,196	46%	30%	12,234	28%	48%
	Total catch	40,330	100%	51%	2,622	100%	13%	42,952	100%	43%
75 - 150 fm	Discarded	25,502	73%	45%	7,874	75%	47%	33,375	73%	45%
	Retained	9,476	27%	44%	2,600	25%	65%	12,076	27%	47%
	Total catch	34,978	100%	45%	10,474	100%	51%	45,451	100%	46%
>150 fm	Discarded	2,145	67%	4%	7,298	97%	44%	9,444	88%	13%
	Retained	1,067	33%	5%	209	3%	5%	1,276	12%	5%
	Total catch	3,212	100%	4%	7,507	100%	36%	10,720	100%	11%
All depths	Discarded	56,939	73%	100%	16,598	81%	100%	73,537	74%	100%
	Retained	21,581	27%	100%	4,004	19%	100%	25,586	26%	100%
	Total catch	78,520	100%	100%	20,602	100%	100%	99,122	100%	100%
Data collected from September 1, 2002 to August 31, 2003										
< 75 fm	Discarded	26,074	74%	47%	3,715	67%	49%	29,789	73%	48%
	Retained	9,188	26%	54%	1,827	33%	89%	11,015	27%	58%
	Total catch	35,262	100%	49%	5,542	100%	58%	40,804	100%	50%
75 - 150 fm	Discarded	27,261	80%	50%	257	100%	3%	27,517	80%	44%
	Retained	6,723	20%	40%				6,723	20%	35%
	Total catch	33,983	100%	47%	257	100%	3%	34,240	100%	42%
>150 fm	Discarded	1,727	64%	3%	3,601	94%	48%	5,328	82%	9%
	Retained	992	36%	6%	218	6%	11%	1,209	18%	6%
	Total catch	2,719	100%	4%	3,819	100%	40%	6,538	100%	8%
All depths	Discarded	55,062	77%	100%	7,572	79%	100%	62,634	77%	100%
	Retained	16,902	23%	100%	2,045	21%	100%	18,947	23%	100%
	Total catch	71,964	100%	100%	9,617	100%	100%	81,582	100%	100%

Table 4 (cont.). Discarded, retained and total catches (in pounds) for 23 groundfish species or species groups by area, depth (in fathoms, fm), and observer-program year in which the data were collected (excluding EFP trips and those using Danish/Scottish seine and mid-water trawl).

Depth group / Disposition of fish		North of 40°10' N. lat.			South of 40°10' N. lat.			Coastwide		
		Pounds of species	Percent of depth group	Percent of disposition type (all depths)	Pounds of species	Percent of depth group	Percent of disposition type (all depths)	Pounds of species	Percent of depth group	Percent of disposition type (all depths)
I. Dover sole										
Data collected from September 1, 2001 to August 31, 2002										
< 75 fm	Discarded	48,481	22%	20%	425	99%	0%	48,906	22%	14%
	Retained	175,169	78%	15%	5	1%	0%	175,174	78%	10%
	Total catch	223,650	100%	16%	430	100%	0%	224,080	100%	11%
75 - 150 fm	Discarded	74,490	26%	31%	2,202	34%	2%	76,692	26%	22%
	Retained	214,560	74%	18%	4,280	66%	1%	218,840	74%	13%
	Total catch	289,050	100%	20%	6,482	100%	1%	295,532	100%	14%
>150 fm	Discarded	114,797	12%	48%	106,531	17%	98%	221,329	14%	64%
	Retained	805,994	88%	67%	525,625	83%	99%	1,330,000	86%	77%
	Total catch	920,791	100%	64%	632,156	100%	99%	1,550,000	100%	75%
All depths	Discarded	237,768	17%	100%	109,159	17%	100%	346,927	17%	100%
	Retained	1,200,000	83%	100%	529,910	83%	100%	1,730,000	83%	100%
	Total catch	1,430,000	100%	100%	639,068	100%	100%	2,070,000	100%	100%
Data collected from September 1, 2002 to August 31, 2003										
< 75 fm	Discarded	27,440	18%	15%	413	87%	1%	27,853	18%	11%
	Retained	128,790	82%	8%	60	13%	0%	128,850	82%	6%
	Total catch	156,230	100%	8%	473	100%	0%	156,703	100%	6%
75 - 150 fm	Discarded	23,824	23%	13%				23,824	23%	9%
	Retained	80,478	77%	5%				80,478	77%	4%
	Total catch	104,302	100%	6%				104,302	100%	4%
>150 fm	Discarded	133,356	8%	72%	67,139	11%	99%	200,495	9%	80%
	Retained	1,460,000	92%	87%	552,188	89%	100%	2,010,000	91%	91%
	Total catch	1,590,000	100%	86%	619,327	100%	100%	2,210,000	100%	89%
All depths	Discarded	184,620	10%	100%	67,553	11%	100%	252,173	10%	100%
	Retained	1,670,000	90%	100%	552,247	89%	100%	2,220,000	90%	100%
	Total catch	1,850,000	100%	100%	619,800	100%	100%	2,470,000	100%	100%
J. Longspine thornyhead										
Data collected from September 1, 2001 to August 31, 2002										
< 75 fm	Discarded	1,159	100%	0%				1,159	100%	0%
	Retained									
	Total catch	1,159	100%	0%				1,159	100%	0%
75 - 150 fm	Discarded	94	5%	0%	1	1%	0%	95	4%	0%
	Retained	1,981	95%	1%	88	99%	0%	2,069	96%	0%
	Total catch	2,075	100%	1%	89	100%	0%	2,164	100%	0%
>150 fm	Discarded	42,114	12%	100%	22,575	11%	100%	64,689	11%	100%
	Retained	308,201	88%	99%	191,655	89%	100%	499,856	89%	99%
	Total catch	350,315	100%	99%	214,230	100%	100%	564,545	100%	99%
All depths	Discarded	42,208	12%	100%	22,576	11%	100%	64,785	11%	100%
	Retained	311,341	88%	100%	191,743	89%	100%	503,084	89%	100%
	Total catch	353,550	100%	100%	214,319	100%	100%	567,868	100%	100%
Data collected from September 1, 2002 to August 31, 2003										
< 75 fm	Discarded	55	100%	0%	50	100%	0%	104	100%	0%
	Retained									
	Total catch	55	100%	0%	50	100%	0%	104	100%	0%
75 - 150 fm	Discarded	5	8%	0%				5	8%	0%
	Retained	59	92%	0%				59	92%	0%
	Total catch	65	100%	0%				65	100%	0%
>150 fm	Discarded	52,816	10%	100%	17,810	8%	100%	70,626	9%	100%
	Retained	484,435	90%	100%	217,946	92%	100%	702,381	91%	100%
	Total catch	537,251	100%	100%	235,756	100%	100%	773,007	100%	100%
All depths	Discarded	52,821	10%	100%	17,810	8%	100%	70,632	9%	100%
	Retained	484,549	90%	100%	217,995	92%	100%	702,544	91%	100%
	Total catch	537,370	100%	100%	235,806	100%	100%	773,176	100%	100%

Table 4 (cont.). Discarded, retained and total catches (in pounds) for 23 groundfish species or species groups by area, depth (in fathoms, fm), and observer-program year in which the data were collected (excluding EFP trips and those using Danish/Scottish seine and mid-water trawl).

Depth group / Disposition of fish		North of 40°10' N. lat.			South of 40°10' N. lat.			Coastwide		
		Pounds of species	Percent of depth group	Percent of disposition type (all depths)	Pounds of species	Percent of depth group	Percent of disposition type (all depths)	Pounds of species	Percent of depth group	Percent of disposition type (all depths)
K. Shortspine thornyhead										
Data collected from September 1, 2001 to August 31, 2002										
< 75 fm	Discarded	79	9%	0%				79	9%	0%
	Retained	782	91%	1%				782	91%	1%
	Total catch	860	100%	1%				860	100%	0%
75 - 150 fm	Discarded	10,433	54%	28%	186	22%	1%	10,619	53%	19%
	Retained	8,762	46%	9%	665	78%	1%	9,427	47%	6%
	Total catch	19,196	100%	14%	851	100%	1%	20,046	100%	10%
>150 fm	Discarded	26,937	24%	72%	18,387	24%	99%	45,324	24%	81%
	Retained	85,512	76%	90%	57,458	76%	99%	142,971	76%	93%
	Total catch	112,449	100%	85%	75,845	100%	99%	188,294	100%	90%
All depths	Discarded	37,449	28%	100%	18,573	24%	100%	56,022	27%	100%
	Retained	95,057	72%	100%	58,123	76%	100%	153,179	73%	100%
	Total catch	132,505	100%	100%	76,696	100%	100%	209,201	100%	100%
Data collected from September 1, 2002 to August 31, 2003										
< 75 fm	Discarded	2	0%	0%				2	0%	0%
	Retained	521	100%	0%	38	100%	0%	559	100%	0%
	Total catch	523	100%	0%	38	100%	0%	562	100%	0%
75 - 150 fm	Discarded	4	1%	0%				4	1%	0%
	Retained	499	99%	0%				499	99%	0%
	Total catch	503	100%	0%				503	100%	0%
>150 fm	Discarded	39,576	21%	100%	13,020	14%	100%	52,596	18%	100%
	Retained	151,518	79%	99%	80,610	86%	100%	232,128	82%	100%
	Total catch	191,094	100%	99%	93,630	100%	100%	284,724	100%	100%
All depths	Discarded	39,582	21%	100%	13,020	14%	100%	52,603	18%	100%
	Retained	152,538	79%	100%	80,648	86%	100%	233,186	82%	100%
	Total catch	192,120	100%	100%	93,669	100%	100%	285,789	100%	100%
L. Unidentified (mixed) thornyheads										
Data collected from September 1, 2001 to August 31, 2002										
< 75 fm	Discarded									
	Retained									
	Total catch									
75 - 150 fm	Discarded	295	11%	0%	68	100%	0%	363	13%	0%
	Retained	2,494	89%	5%				2,494	87%	4%
	Total catch	2,789	100%	3%	68	100%	0%	2,857	100%	2%
>150 fm	Discarded	63,971	59%	100%	34,796	77%	100%	98,768	65%	100%
	Retained	44,092	41%	95%	10,221	23%	100%	54,313	35%	96%
	Total catch	108,063	100%	97%	45,017	100%	100%	153,081	100%	98%
All depths	Discarded	64,267	58%	100%	34,864	77%	100%	99,131	64%	100%
	Retained	46,586	42%	100%	10,221	23%	100%	56,807	36%	100%
	Total catch	110,853	100%	100%	45,085	100%	100%	155,938	100%	100%
Data collected from September 1, 2002 to August 31, 2003										
< 75 fm	Discarded									
	Retained									
	Total catch									
75 - 150 fm	Discarded	36	100%	0%				36	100%	0%
	Retained									
	Total catch	36	100%	0%				36	100%	0%
>150 fm	Discarded	150,480	86%	100%	21,867	54%	100%	172,347	80%	100%
	Retained	25,506	14%	100%	18,266	46%	100%	43,772	20%	100%
	Total catch	175,986	100%	100%	40,133	100%	100%	216,119	100%	100%
All depths	Discarded	150,516	86%	100%	21,867	54%	100%	172,383	80%	100%
	Retained	25,506	14%	100%	18,266	46%	100%	43,772	20%	100%
	Total catch	176,022	100%	100%	40,133	100%	100%	216,154	100%	100%

Table 4 (cont.). Discarded, retained and total catches (in pounds) for 23 groundfish species or species groups by area, depth (in fathoms, fm), and observer-program year in which the data were collected (excluding EFP trips and those using Danish/Scottish seine and mid-water trawl).

		North of 40°10' N. lat.			South of 40°10' N. lat.			Coastwide		
		Pounds of species	Percent of depth group	Percent of disposition type (all depths)	Pounds of species	Percent of depth group	Percent of disposition type (all depths)	Pounds of species	Percent of depth group	Percent of disposition type (all depths)
Depth group	Disposition of fish									
M. Sablefish										
Data collected from September 1, 2001 to August 31, 2002										
< 75 fm	Discarded	245,389	92%	47%	2,925	58%	3%	248,314	92%	39%
	Retained	20,931	8%	6%	2,079	42%	2%	23,010	8%	5%
	Total catch	266,320	100%	30%	5,004	100%	2%	271,324	100%	25%
75 - 150 fm	Discarded	141,001	65%	27%	21,486	78%	20%	162,486	67%	26%
	Retained	75,363	35%	21%	5,993	22%	6%	81,356	33%	17%
	Total catch	216,364	100%	24%	27,479	100%	13%	243,843	100%	22%
>150 fm	Discarded	139,353	34%	27%	83,774	46%	77%	223,127	38%	35%
	Retained	268,713	66%	74%	98,007	54%	92%	366,720	62%	78%
	Total catch	408,066	100%	46%	181,780	100%	85%	589,847	100%	53%
All depths	Discarded	525,742	59%	100%	108,185	50%	100%	633,927	57%	100%
	Retained	365,007	41%	100%	106,078	50%	100%	471,086	43%	100%
	Total catch	890,750	100%	100%	214,264	100%	100%	1,110,000	100%	100%
Data collected from September 1, 2002 to August 31, 2003										
< 75 fm	Discarded	23,413	62%	10%	3,364	91%	7%	26,777	65%	9%
	Retained	14,379	38%	3%	329	9%	0%	14,707	35%	2%
	Total catch	37,791	100%	5%	3,693	100%	2%	41,484	100%	5%
75 - 150 fm	Discarded	10,339	42%	4%	226	98%	0%	10,565	42%	4%
	Retained	14,472	58%	3%	5	2%	0%	14,478	58%	2%
	Total catch	24,811	100%	3%	231	100%	0%	25,042	100%	3%
>150 fm	Discarded	210,088	32%	86%	42,715	24%	92%	252,803	30%	87%
	Retained	444,381	68%	94%	137,397	76%	100%	581,778	70%	95%
	Total catch	654,469	100%	91%	180,111	100%	98%	834,580	100%	93%
All depths	Discarded	243,839	34%	100%	46,305	25%	100%	290,144	32%	100%
	Retained	473,232	66%	100%	137,731	75%	100%	610,963	68%	100%
	Total catch	717,072	100%	100%	184,035	100%	100%	901,107	100%	100%
N. Pacific hake										
Data collected from September 1, 2001 to August 31, 2002										
< 75 fm	Discarded	402,807	98%	63%	1,686	100%	2%	404,493	98%	57%
	Retained	7,035	2%	77%				7,035	2%	76%
	Total catch	409,842	100%	63%	1,686	100%	2%	411,528	100%	57%
75 - 150 fm	Discarded	138,380	98%	22%	28,596	100%	40%	166,977	99%	23%
	Retained	2,146	2%	23%	80	0%	100%	2,226	1%	24%
	Total catch	140,527	100%	22%	28,676	100%	40%	169,203	100%	23%
>150 fm	Discarded									
	Retained	98,052	100%	15%	41,413	100%	58%	139,464	100%	20%
	Total catch	98,052	100%	15%	41,413	100%	58%	139,464	100%	19%
All depths	Discarded	639,239	99%	100%	71,695	100%	100%	710,934	99%	100%
	Retained	9,181	1%	100%	80	0%	100%	9,261	1%	100%
	Total catch	648,420	100%	100%	71,775	100%	100%	720,195	100%	100%
Data collected from September 1, 2002 to August 31, 2003										
< 75 fm	Discarded	132,389	95%	36%	7,549	96%	12%	139,938	95%	32%
	Retained	7,431	5%	35%	280	4%	100%	7,711	5%	36%
	Total catch	139,820	100%	36%	7,829	100%	12%	147,649	100%	32%
75 - 150 fm	Discarded	111,653	90%	30%	122	100%	0%	111,775	90%	26%
	Retained	11,935	10%	56%				11,935	10%	55%
	Total catch	123,589	100%	32%	122	100%	0%	123,711	100%	27%
>150 fm	Discarded	126,051	99%	34%	55,330	100%	88%	181,381	99%	42%
	Retained	1,904	1%	9%				1,904	1%	9%
	Total catch	127,955	100%	33%	55,330	100%	87%	183,285	100%	40%
All depths	Discarded	370,094	95%	100%	63,001	100%	100%	433,094	95%	100%
	Retained	21,271	5%	100%	280	0%	100%	21,551	5%	100%
	Total catch	391,364	100%	100%	63,281	100%	100%	454,645	100%	100%

Table 4 (cont.). Discarded, retained and total catches (in pounds) for 23 groundfish species or species groups by area, depth (in fathoms, fm), and observer-program year in which the data were collected (excluding EFP trips and those using Danish/Scottish seine and mid-water trawl).

Depth group / Disposition of fish		North of 40°10' N. lat.			South of 40°10' N. lat.			Coastwide		
		Pounds of species	Percent of depth group	Percent of disposition type (all depths)	Pounds of species	Percent of depth group	Percent of disposition type (all depths)	Pounds of species	Percent of depth group	Percent of disposition type (all depths)
O. Arrowtooth flounder										
Data collected from September 1, 2001 to August 31, 2002										
< 75 fm	Discarded	103,981	68%	29%				103,981	68%	29%
	Retained	49,860	32%	14%				49,860	32%	14%
	Total catch	153,842	100%	22%				153,842	100%	22%
75 - 150 fm	Discarded	156,485	69%	43%	1,191	100%	68%	157,676	70%	43%
	Retained	68,944	31%	20%				68,944	30%	20%
	Total catch	225,429	100%	32%	1,191	100%	57%	226,620	100%	32%
>150 fm	Discarded	102,523	31%	28%	556	61%	32%	103,079	31%	28%
	Retained	230,124	69%	66%	358	39%	100%	230,482	69%	66%
	Total catch	332,647	100%	47%	914	100%	43%	333,561	100%	47%
All depths	Discarded	362,990	51%	100%	1,747	83%	100%	364,737	51%	100%
	Retained	348,928	49%	100%	358	17%	100%	349,286	49%	100%
	Total catch	711,918	100%	100%	2,105	100%	100%	714,023	100%	100%
Data collected from September 1, 2002 to August 31, 2003										
< 75 fm	Discarded	34,142	54%	22%	3	2%	0%	34,145	54%	21%
	Retained	29,177	46%	12%	169	98%	39%	29,346	46%	12%
	Total catch	63,319	100%	16%	172	100%	6%	63,491	100%	16%
75 - 150 fm	Discarded	36,970	51%	24%				36,970	51%	23%
	Retained	35,654	49%	15%				35,654	49%	15%
	Total catch	72,624	100%	18%				72,624	100%	18%
>150 fm	Discarded	85,669	33%	55%	2,483	90%	100%	88,152	33%	55%
	Retained	175,595	67%	73%	266	10%	61%	175,861	67%	73%
	Total catch	261,264	100%	66%	2,749	100%	94%	264,013	100%	66%
All depths	Discarded	156,781	39%	100%	2,486	85%	100%	159,267	40%	100%
	Retained	240,426	61%	100%	435	15%	100%	240,861	60%	100%
	Total catch	397,207	100%	100%	2,921	100%	100%	400,128	100%	100%
P. Petrale sole										
Data collected from September 1, 2001 to August 31, 2002										
< 75 fm	Discarded	34,855	16%	75%	479	5%	29%	35,334	16%	74%
	Retained	176,683	84%	36%	8,427	95%	14%	185,109	84%	34%
	Total catch	211,538	100%	40%	8,905	100%	14%	220,443	100%	37%
75 - 150 fm	Discarded	9,888	17%	21%	1,043	2%	64%	10,931	11%	23%
	Retained	47,236	83%	10%	42,919	98%	71%	90,155	89%	17%
	Total catch	57,124	100%	11%	43,962	100%	70%	101,086	100%	17%
>150 fm	Discarded	1,503	1%	3%	114	1%	7%	1,617	1%	3%
	Retained	260,542	99%	54%	9,519	99%	16%	270,060	99%	50%
	Total catch	262,044	100%	49%	9,633	100%	15%	271,677	100%	46%
All depths	Discarded	46,245	9%	100%	1,636	3%	100%	47,881	8%	100%
	Retained	484,461	91%	100%	60,864	97%	100%	545,325	92%	100%
	Total catch	530,706	100%	100%	62,500	100%	100%	593,206	100%	100%
Data collected from September 1, 2002 to August 31, 2003										
< 75 fm	Discarded	15,378	14%	69%	1,822	5%	93%	17,200	11%	71%
	Retained	98,061	86%	32%	37,133	95%	68%	135,194	89%	38%
	Total catch	113,439	100%	35%	38,955	100%	69%	152,394	100%	40%
75 - 150 fm	Discarded	6,434	9%	29%				6,434	9%	26%
	Retained	65,419	91%	21%	1,528	100%	3%	66,947	91%	19%
	Total catch	71,853	100%	22%	1,528	100%	3%	73,381	100%	19%
>150 fm	Discarded	576	0%	3%	140	1%	7%	716	0%	3%
	Retained	141,663	100%	46%	15,890	99%	29%	157,553	100%	44%
	Total catch	142,239	100%	43%	16,030	100%	28%	158,268	100%	41%
All depths	Discarded	22,388	7%	100%	1,962	3%	100%	24,350	6%	100%
	Retained	305,143	93%	100%	54,551	97%	100%	359,694	94%	100%
	Total catch	327,531	100%	100%	56,513	100%	100%	384,044	100%	100%

Table 4 (cont.). Discarded, retained and total catches (in pounds) for 23 groundfish species or species groups by area, depth (in fathoms, fm), and observer-program year in which the data were collected (excluding EFP trips and those using Danish/Scottish seine and mid-water trawl).

Depth group / Disposition of fish		North of 40°10' N. lat.			South of 40°10' N. lat.			Coastwide		
		Pounds of species	Percent of depth group	Percent of disposition type (all depths)	Pounds of species	Percent of depth group	Percent of disposition type (all depths)	Pounds of species	Percent of depth group	Percent of disposition type (all depths)
Q. Other Flatfish										
Data collected from September 1, 2001 to August 31, 2002										
< 75 fm	Discarded	352,676	43%	74%	47,360	22%	56%	400,036	39%	71%
	Retained	470,025	57%	74%	164,387	78%	64%	634,411	61%	71%
	Total catch	822,700	100%	74%	211,747	100%	62%	1,030,000	100%	71%
75 - 150 fm	Discarded	87,986	44%	18%	20,768	24%	25%	108,754	38%	19%
	Retained	112,341	56%	18%	65,364	76%	25%	177,706	62%	20%
	Total catch	200,327	100%	18%	86,133	100%	25%	286,459	100%	20%
>150 fm	Discarded	36,092	39%	8%	15,879	37%	19%	51,971	39%	9%
	Retained	55,998	61%	9%	26,829	63%	10%	82,826	61%	9%
	Total catch	92,089	100%	8%	42,708	100%	13%	134,797	100%	9%
All depths	Discarded	476,753	43%	100%	84,008	25%	100%	560,761	39%	100%
	Retained	638,364	57%	100%	256,579	75%	100%	894,943	61%	100%
	Total catch	1,120,000	100%	100%	340,588	100%	100%	1,460,000	100%	100%
Data collected from September 1, 2002 to August 31, 2003										
< 75 fm	Discarded	136,643	31%	51%	70,790	47%	83%	207,433	35%	58%
	Retained	307,451	69%	56%	81,218	53%	67%	388,669	65%	58%
	Total catch	444,094	100%	54%	152,008	100%	74%	596,103	100%	58%
75 - 150 fm	Discarded	102,410	41%	38%	2,647	68%	3%	105,057	41%	30%
	Retained	149,416	59%	27%	1,266	32%	1%	150,682	59%	23%
	Total catch	251,827	100%	31%	3,912	100%	2%	255,739	100%	25%
>150 fm	Discarded	31,265	26%	12%	11,407	23%	13%	42,672	25%	12%
	Retained	90,665	74%	17%	39,232	77%	32%	129,897	75%	19%
	Total catch	121,930	100%	15%	50,639	100%	25%	172,570	100%	17%
All depths	Discarded	270,319	33%	100%	84,844	41%	100%	355,163	35%	100%
	Retained	547,532	67%	100%	121,716	59%	100%	669,248	65%	100%
	Total catch	817,851	100%	100%	206,560	100%	100%	1,020,000	100%	100%
R. Other Slope Rockfish										
Data collected from September 1, 2001 to August 31, 2002										
< 75 fm	Discarded	216	100%	1%	336	5%	2%	552	7%	1%
	Retained				6,875	95%	7%	6,875	93%	7%
	Total catch	216	100%	1%	7,212	100%	6%	7,427	100%	5%
75 - 150 fm	Discarded	20,744	100%	64%	1,965	58%	9%	22,709	94%	41%
	Retained	36	0%	68%	1,436	42%	1%	1,472	6%	1%
	Total catch	20,780	100%	64%	3,401	100%	3%	24,181	100%	16%
>150 fm	Discarded	11,681	100%	36%	20,078	18%	90%	31,759	26%	58%
	Retained	17	0%	32%	91,529	82%	92%	91,546	74%	92%
	Total catch	11,697	100%	36%	111,607	100%	91%	123,304	100%	80%
All depths	Discarded	32,640	100%	100%	22,380	18%	100%	55,020	36%	100%
	Retained	53	0%	100%	99,840	82%	100%	99,893	64%	100%
	Total catch	32,693	100%	100%	122,220	100%	100%	154,913	100%	100%
Data collected from September 1, 2002 to August 31, 2003										
< 75 fm	Discarded	91	100%	0%				91	86%	0%
	Retained				15	100%	0%	15	14%	0%
	Total catch	91	100%	0%	15	100%	0%	106	100%	0%
75 - 150 fm	Discarded	4,051	100%	12%	9	100%	0%	4,060	100%	7%
	Retained	7	0%	3%				7	0%	0%
	Total catch	4,058	100%	12%	9	100%	0%	4,067	100%	4%
>150 fm	Discarded	30,621	99%	88%	23,218	38%	100%	53,839	58%	93%
	Retained	246	1%	97%	38,090	62%	100%	38,336	42%	100%
	Total catch	30,867	100%	88%	61,308	100%	100%	92,175	100%	96%
All depths	Discarded	34,763	99%	100%	23,226	38%	100%	57,989	60%	100%
	Retained	253	1%	100%	38,105	62%	100%	38,358	40%	100%
	Total catch	35,016	100%	100%	61,331	100%	100%	96,347	100%	100%

Table 4 (cont.). Discarded, retained and total catches (in pounds) for 23 groundfish species or species groups by area, depth (in fathoms, fm), and observer-program year in which the data were collected (excluding EFP trips and those using Danish/Scottish seine and mid-water trawl).

Depth group / Disposition of fish		North of 40°10' N. lat.			South of 40°10' N. lat.			Coastwide		
		Pounds of species	Percent of depth group	Percent of disposition type (all depths)	Pounds of species	Percent of depth group	Percent of disposition type (all depths)	Pounds of species	Percent of depth group	Percent of disposition type (all depths)
S. Yellowtail Rockfish										
Data collected from September 1, 2001 to August 31, 2002										
< 75 fm	Discarded	5,065	13%	27%	3	5%	100%	5,067	13%	27%
	Retained	33,977	87%	50%	48	95%	95%	34,025	87%	50%
	Total catch	39,042	100%	45%	51	100%	96%	39,092	100%	45%
75 - 150 fm	Discarded	13,799	29%	73%				13,799	29%	73%
	Retained	33,427	71%	50%				33,427	71%	50%
	Total catch	47,226	100%	55%				47,226	100%	55%
>150 fm	Discarded	25	41%	0%				25	39%	0%
	Retained	37	59%	0%	2	100%	5%	39	61%	0%
	Total catch	62	100%	0%	2	100%	4%	64	100%	0%
All depths	Discarded	18,889	22%	100%	3	5%	100%	18,892	22%	100%
	Retained	67,440	78%	100%	50	95%	100%	67,491	78%	100%
	Total catch	86,329	100%	100%	53	100%	100%	86,382	100%	100%
Data collected from September 1, 2002 to August 31, 2003										
< 75 fm	Discarded	259	3%	48%	8	100%	100%	267	3%	49%
	Retained	9,408	97%	41%				9,408	97%	41%
	Total catch	9,667	100%	41%	8	100%	100%	9,675	100%	41%
75 - 150 fm	Discarded	59	0%	11%				59	0%	11%
	Retained	13,414	100%	59%				13,414	100%	59%
	Total catch	13,473	100%	58%				13,473	100%	57%
>150 fm	Discarded	224	77%	41%				224	77%	41%
	Retained	67	23%	0%				67	23%	0%
	Total catch	291	100%	1%				291	100%	1%
All depths	Discarded	542	2%	100%	8	100%	100%	550	2%	100%
	Retained	22,888	98%	100%				22,888	98%	100%
	Total catch	23,430	100%	100%	8	100%	100%	23,438	100%	100%
T. Other Shelf Rockfish										
Data collected from September 1, 2001 to August 31, 2002										
< 75 fm	Discarded	3,763	100%	16%	2,833	73%	6%	6,596	87%	10%
	Retained	3	0%	0%	1,026	27%	3%	1,029	13%	3%
	Total catch	3,766	100%	15%	3,859	100%	5%	7,625	100%	7%
75 - 150 fm	Discarded	19,308	95%	80%	33,560	52%	75%	52,869	62%	77%
	Retained	1,109	5%	98%	31,026	48%	90%	32,135	38%	91%
	Total catch	20,417	100%	81%	64,587	100%	82%	85,004	100%	81%
>150 fm	Discarded	1,157	99%	5%	8,328	78%	19%	9,485	80%	14%
	Retained	18	1%	2%	2,316	22%	7%	2,333	20%	7%
	Total catch	1,175	100%	5%	10,644	100%	13%	11,819	100%	11%
All depths	Discarded	24,228	96%	100%	44,721	57%	100%	68,950	66%	100%
	Retained	1,129	4%	100%	34,368	43%	100%	35,498	34%	100%
	Total catch	25,358	100%	100%	79,089	100%	100%	104,447	100%	100%
Data collected from September 1, 2002 to August 31, 2003										
< 75 fm	Discarded	1,368	99%	4%	615	65%	26%	1,983	85%	6%
	Retained	20	1%	6%	335	35%	99%	355	15%	54%
	Total catch	1,389	100%	4%	950	100%	35%	2,338	100%	7%
75 - 150 fm	Discarded	28,319	100%	86%	108	100%	5%	28,427	100%	81%
	Retained	54	0%	17%				54	0%	8%
	Total catch	28,373	100%	86%	108	100%	4%	28,481	100%	80%
>150 fm	Discarded	3,089	93%	9%	1,660	100%	70%	4,749	95%	14%
	Retained	247	7%	77%	3	0%	1%	250	5%	38%
	Total catch	3,336	100%	10%	1,663	100%	61%	4,999	100%	14%
All depths	Discarded	32,777	99%	100%	2,382	88%	100%	35,159	98%	100%
	Retained	321	1%	100%	338	12%	100%	659	2%	100%
	Total catch	33,098	100%	100%	2,720	100%	100%	35,818	100%	100%

Table 4 (cont.). Discarded, retained and total catches (in pounds) for 23 groundfish species or species groups by area, depth (in fathoms, fm), and observer-program year in which the data were collected (excluding EFP trips and those using Danish/Scottish seine and mid-water trawl).

Depth group / Disposition of fish		North of 40°10' N. lat.			South of 40°10' N. lat.			Coastwide		
		Pounds of species	Percent of depth group	Percent of disposition type (all depths)	Pounds of species	Percent of depth group	Percent of disposition type (all depths)	Pounds of species	Percent of depth group	Percent of disposition type (all depths)
U. Black Rockfish										
Data collected from September 1, 2001 to August 31, 2002										
< 75 fm	Discarded	173	46%	100%				173	46%	100%
	Retained	204	54%	93%				204	54%	93%
	Total catch	377	100%	96%				377	100%	96%
75 - 150 fm	Discarded									
	Retained	14	100%	6%				14	100%	6%
	Total catch	14	100%	4%				14	100%	4%
>150 fm	Discarded									
	Retained	1	100%	0%				1	100%	0%
	Total catch	1	100%	0%				1	100%	0%
All depths	Discarded	173	44%	100%				173	44%	100%
	Retained	218	56%	100%				218	56%	100%
	Total catch	391	100%	100%				391	100%	100%
Data collected from September 1, 2002 to August 31, 2003										
< 75 fm	Discarded									
	Retained	38	100%	96%				38	100%	96%
	Total catch	38	100%	96%				38	100%	96%
75 - 150 fm	Discarded									
	Retained	2	100%	4%				2	100%	4%
	Total catch	2	100%	4%				2	100%	4%
>150 fm	Discarded									
	Retained									
	Total catch									
All depths	Discarded									
	Retained	40	100%	100%				40	100%	100%
	Total catch	40	100%	100%				40	100%	100%
V. Other Nearshore Rockfish										
Data collected from September 1, 2001 to August 31, 2002										
< 75 fm	Discarded	68	88%	73%	18	96%	0%	86	90%	2%
	Retained	9	12%	100%	1	4%	8%	10	10%	50%
	Total catch	77	100%	76%	19	100%	0%	96	100%	2%
75 - 150 fm	Discarded	25	100%	27%	4,494	100%	100%	4,518	100%	98%
	Retained									
	Total catch	25	100%	24%	4,494	100%	99%	4,518	100%	98%
>150 fm	Discarded				3	25%	0%	3	25%	0%
	Retained				10	75%	92%	10	75%	50%
	Total catch				13	100%	0%	13	100%	0%
All depths	Discarded	92	91%	100%	4,515	100%	100%	4,607	100%	100%
	Retained	9	9%	100%	11	0%	100%	20	0%	100%
	Total catch	101	100%	100%	4,526	100%	100%	4,627	100%	100%
Data collected from September 1, 2002 to August 31, 2003										
< 75 fm	Discarded	15	100%	38%	20	19%	63%	36	29%	49%
	Retained				88	81%	100%	88	71%	100%
	Total catch	15	100%	38%	108	100%	90%	124	100%	77%
75 - 150 fm	Discarded	22	100%	55%	12	100%	37%	34	100%	47%
	Retained									
	Total catch	22	100%	55%	12	100%	10%	34	100%	21%
>150 fm	Discarded	3	100%	7%				3	100%	4%
	Retained									
	Total catch	3	100%	7%				3	100%	2%
All depths	Discarded	41	100%	100%	33	27%	100%	73	45%	100%
	Retained				88	73%	100%	88	55%	100%
	Total catch	41	100%	100%	121	100%	100%	161	100%	100%

Table 4 (cont.). Discarded, retained and total catches (in pounds) for 23 groundfish species or species groups by area, depth (in fathoms, fm), and observer-program year in which the data were collected (excluding EFP trips and those using Danish/Scottish seine and mid-water trawl).

Depth group / Disposition of fish		North of 40°10' N. lat.			South of 40°10' N. lat.			Coastwide		
		Pounds of species	Percent of depth group	Percent of disposition type (all depths)	Pounds of species	Percent of depth group	Percent of disposition type (all depths)	Pounds of species	Percent of depth group	Percent of disposition type (all depths)
W. Roundfish other than Sablefish and Hake										
Data collected from September 1, 2001 to August 31, 2002										
< 75 fm	Discarded	6,707	6%	4%	54	100%	0%	6,761	6%	3%
	Retained	107,621	94%	57%				107,621	94%	53%
	Total catch	114,328	100%	32%	54	100%	0%	114,382	100%	26%
75 - 150 fm	Discarded	6,459	13%	4%				6,459	13%	3%
	Retained	43,153	87%	23%				43,153	87%	21%
	Total catch	49,612	100%	14%				49,612	100%	11%
>150 fm	Discarded	160,868	81%	92%	65,719	81%	100%	226,586	81%	94%
	Retained	37,431	19%	20%	15,668	19%	100%	53,098	19%	26%
	Total catch	198,299	100%	55%	81,386	100%	100%	279,685	100%	63%
All depths	Discarded	174,034	48%	100%	65,773	81%	100%	239,807	54%	100%
	Retained	188,205	52%	100%	15,668	19%	100%	203,872	46%	100%
	Total catch	362,239	100%	100%	81,440	100%	100%	443,679	100%	100%
Data collected from September 1, 2002 to August 31, 2003										
< 75 fm	Discarded	17,798	12%	7%	75	100%	0%	17,872	12%	6%
	Retained	136,250	88%	45%				136,250	88%	44%
	Total catch	154,048	100%	28%	75	100%	0%	154,122	100%	25%
75 - 150 fm	Discarded	8,322	8%	3%				8,322	8%	3%
	Retained	96,397	92%	32%				96,397	92%	31%
	Total catch	104,719	100%	19%				104,719	100%	17%
>150 fm	Discarded	218,545	76%	89%	50,542	82%	100%	269,087	77%	91%
	Retained	68,756	24%	23%	11,068	18%	100%	79,824	23%	26%
	Total catch	287,301	100%	53%	61,611	100%	100%	348,912	100%	57%
All depths	Discarded	244,665	45%	100%	50,617	82%	100%	295,282	49%	100%
	Retained	301,403	55%	100%	11,068	18%	100%	312,472	51%	100%
	Total catch	546,068	100%	100%	61,685	100%	100%	607,753	100%	100%

Table 5. Discarded, retained and total catches (in pounds) for 3 non-groundfish species or species groups by area, depth (in fathoms, fm), and observer-program year in which the data were collected (excluding EFP trips and those using Danish/Scottish seine and mid-water trawl).

Depth group / Disposition of fish		North of 40°10' N. lat.			South of 40°10' N. lat.			Coastwide		
		Pounds of species	Percent of depth group	Percent of disposition type (all depths)	Pounds of species	Percent of depth group	Percent of disposition type (all depths)	Pounds of species	Percent of depth group	Percent of disposition type (all depths)
A. California halibut										
Data collected from September 1, 2001 to August 31, 2002										
< 75 fm	Discarded	145	15%	69%	1,772	27%	100%	1,917	25%	97%
	Retained	853	85%	100%	4,829	73%	100%	5,682	75%	100%
	Total catch	998	100%	94%	6,601	100%	100%	7,599	100%	99%
75 - 150 fm	Discarded	65	100%	31%				65	100%	3%
	Retained									
	Total catch	65	100%	6%				65	100%	1%
>150 fm	Discarded									
	Retained									
	Total catch									
All depths	Discarded	210	20%	100%	1,772	27%	100%	1,982	26%	100%
	Retained	853	80%	100%	4,829	73%	100%	5,682	74%	100%
	Total catch	1,063	100%	100%	6,601	100%	100%	7,663	100%	100%
Data collected from September 1, 2002 to August 31, 2003										
< 75 fm	Discarded				933	11%	100%	933	11%	100%
	Retained	12	100%	100%	7,277	89%	90%	7,289	89%	90%
	Total catch	12	100%	100%	8,210	100%	91%	8,222	100%	91%
75 - 150 fm	Discarded									
	Retained									
	Total catch									
>150 fm	Discarded									
	Retained				842	100%	10%	842	100%	10%
	Total catch				842	100%	9%	842	100%	9%
All depths	Discarded				933	10%	100%	933	10%	100%
	Retained	12	100%	100%	8,119	90%	100%	8,131	90%	100%
	Total catch	12	100%	100%	9,052	100%	100%	9,064	100%	100%
B. Pacific halibut										
Data collected from September 1, 2001 to August 31, 2002										
< 75 fm	Discarded	39,034	100%	27%				39,034	100%	27%
	Retained									
	Total catch	39,034	100%	27%				39,034	100%	27%
75 - 150 fm	Discarded	20,009	100%	14%	80	100%	40%	20,090	100%	14%
	Retained									
	Total catch	20,009	100%	14%	80	100%	40%	20,090	100%	14%
>150 fm	Discarded	86,247	100%	59%	122	100%	60%	86,370	100%	59%
	Retained									
	Total catch	86,247	100%	59%	122	100%	60%	86,370	100%	59%
All depths	Discarded	145,291	100%	100%	203	100%	100%	145,494	100%	100%
	Retained									
	Total catch	145,291	100%	100%	203	100%	100%	145,494	100%	100%
Data collected from September 1, 2002 to August 31, 2003										
< 75 fm	Discarded	15,637	100%	26%	32	100%	100%	15,669	100%	26%
	Retained									
	Total catch	15,637	100%	26%	32	100%	100%	15,669	100%	26%
75 - 150 fm	Discarded	17,538	100%	29%				17,538	100%	29%
	Retained									
	Total catch	17,538	100%	29%				17,538	100%	29%
>150 fm	Discarded	26,472	100%	44%				26,472	100%	44%
	Retained									
	Total catch	26,472	100%	44%				26,472	100%	44%
All depths	Discarded	59,647	100%	100%	32	100%	100%	59,679	100%	100%
	Retained									
	Total catch	59,647	100%	100%	32	100%	100%	59,679	100%	100%

Table 5 (cont.). Discarded, retained and total catches (in pounds) for 3 non-groundfish species or species groups by area, depth (in fathoms, fm), and observer-program year in which the data were collected (excluding EFP trips and those using Danish/Scottish seine and mid-water trawl).

Depth group / Disposition of fish		North of 40°10' N. lat.			South of 40°10' N. lat.			Coastwide		
		Pounds of species	Percent of depth group	Percent of disposition type (all depths)	Pounds of species	Percent of depth group	Percent of disposition type (all depths)	Pounds of species	Percent of depth group	Percent of disposition type (all depths)
C. All Salmon species										
Data collected from September 1, 2001 to August 31, 2002										
< 75 fm	Discarded	1,474	100%	24%	104	85%	39%	1,577	99%	25%
	Retained				18	15%	100%	18	1%	81%
	Total catch	1,474	100%	24%	122	100%	43%	1,595	100%	25%
75 - 150 fm	Discarded	1,673	100%	28%	138	100%	52%	1,811	100%	29%
	Retained	4	0%	100%				4	0%	19%
	Total catch	1,677	100%	28%	138	100%	48%	1,815	100%	29%
>150 fm	Discarded	2,905	100%	48%	25	100%	9%	2,931	100%	46%
	Retained									
	Total catch	2,905	100%	48%	25	100%	9%	2,931	100%	46%
All depths	Discarded	6,052	100%	100%	267	94%	100%	6,319	100%	100%
	Retained	4	0%	100%	18	6%	100%	22	0%	100%
	Total catch	6,056	100%	100%	285	100%	100%	6,341	100%	100%
Data collected from September 1, 2002 to August 31, 2003										
< 75 fm	Discarded	2,408	100%	22%	119	100%	94%	2,527	100%	23%
	Retained									
	Total catch	2,408	100%	22%	119	100%	94%	2,527	100%	23%
75 - 150 fm	Discarded	5,569	100%	51%				5,569	100%	50%
	Retained									
	Total catch	5,569	100%	51%				5,569	100%	50%
>150 fm	Discarded	2,972	100%	27%	8	100%	6%	2,980	100%	27%
	Retained									
	Total catch	2,972	100%	27%	8	100%	6%	2,980	100%	27%
All depths	Discarded	10,949	100%	100%	127	100%	100%	11,077	100%	100%
	Retained									
	Total catch	10,949	100%	100%	127	100%	100%	11,077	100%	100%

Table 6. Ratio estimators and standard errors (s.e.) for the discarded pounds of 29 selected species or species groups, by area, observer-program year, depth, and 2-month period. Standard errors cannot be calculated where there is only one tow in a category.

NOTE: RESULTS FOR CATEGORIES WITH FEWER THAN 10 TOWS SHOULD BE TREATED VERY CAUTIOUSLY.

Species	September 1, 2001 to August 31, 2002 (1st program year)										September 1, 2002 to August 31, 2003 (2nd program year)									
	Area Depth group Period	Number of tows	Discarded		Discarded lbs per lb of retained groundfish		Discard rate of each species		Number of tows	Discarded		Discarded lbs per lb of retained groundfish		Discard rate of each species						
			lbs per hour	s.e.	ratio	s.e.	discard / catch	s.e.		lbs per hour	s.e.	ratio	s.e.	discard / catch	s.e.					
Arrowtooth flounder																				
North of 40°10' N. lat. (near Cape Mendocino)																				
0-75 fm		Sept.-Oct.	91	23.75	13.323	9.319%	0.053	93%	0.634	197	30.69	4.890	4.241%	0.008	62%	0.130				
		Nov.-Dec.	73	3.29	0.827	1.445%	0.004	100%	0.336	62	15.70	3.656	2.877%	0.007	64%	0.178				
		Jan.-Feb.	8	8.08	7.638	4.398%	0.042	100%	0.994	4	47.80	40.554	6.847%	0.061	100%	0.958				
		Mar.-Apr.	144	16.71	4.847	4.587%	0.014	73%	0.248	179	28.18	4.728	4.792%	0.009	39%	0.068				
		May-June	470	77.74	12.200	16.432%	0.028	65%	0.131	67	9.87	2.159	1.930%	0.004	55%	0.121				
		July-Aug.	408	23.66	3.075	5.369%	0.007	69%	0.142	37	71.86	16.337	11.088%	0.029	98%	0.286				
75-150 fm		Sept.-Oct.	125	81.55	13.508	18.042%	0.032	50%	0.080	42	74.34	16.245	13.198%	0.030	61%	0.121				
		Nov.-Dec.	18	36.73	32.963	4.025%	0.037	98%	0.961	11	46.22	17.440	5.999%	0.025	28%	0.088				
		Jan.-Feb.	29	23.62	8.614	2.614%	0.016	86%	0.359	27	76.98	11.474	7.094%	0.012	100%	0.198				
		Mar.-Apr.	142	80.49	10.959	19.927%	0.031	72%	0.134	145	50.75	7.888	7.162%	0.012	45%	0.059				
		May-June	86	125.37	34.286	26.095%	0.075	86%	0.282	12	8.75	6.002	1.128%	0.008	27%	0.094				
		July-Aug.	89	265.19	40.973	43.045%	0.071	79%	0.130											
>=150 fm		Sept.-Oct.	110	0.15	0.072	0.072%	0.000	1%	0.004	155	0.29	0.094	0.134%	0.000	57%	0.173				
		Nov.-Dec.	23	15.11	4.288	2.183%	0.006	33%	0.080	113	28.22	5.454	8.503%	0.017	78%	0.163				
		Jan.-Feb.	315	20.43	3.291	4.614%	0.008	33%	0.081	173	21.13	3.269	5.433%	0.009	44%	0.050				
		Mar.-Apr.	317	20.18	4.004	5.085%	0.010	27%	0.053	300	5.00	1.397	0.999%	0.003	17%	0.041				
		May-June	77	29.24	15.684	10.159%	0.055	97%	0.665	302	5.13	1.482	1.490%	0.004	22%	0.081				
		July-Aug.	20	20.45	19.287	4.733%	0.045	22%	0.143	195	17.04	6.058	3.970%	0.014	27%	0.084				
South of 40°10' N. lat. (near Cape Mendocino)																				
0-75 fm		Sept.-Oct.	42	0.00		0.000%														
		Nov.-Dec.	4	0.00		0.000%														
		Jan.-Feb.	40	0.00		0.000%				8	0.00		0.000%							
		Mar.-Apr.	29	0.00		0.000%				31	0.00	0.002	0.001%	0.000	0%	0.002				
		May-June	3	0.00		0.000%				60	0.00		0.000%		0%					
		July-Aug.								73	0.02	0.018	0.008%	0.000	52%	0.409				
75-150 fm		Sept.-Oct.	60	1.55	0.926	0.439%	0.003	100%	0.766											
		Nov.-Dec.	14	0.10	0.101	0.020%	0.000	100%	1.000	3	0.00		0.000%							
		Jan.-Feb.	18	6.72	3.141	1.370%	0.007	100%	0.611											
		Mar.-Apr.	8	3.62	1.319	0.668%	0.003	100%	0.472											
		May-June	13	5.77	2.113	1.612%	0.006	100%	0.473											
		July-Aug.	1	1.07		0.556%		100%												
>=150 fm		Sept.-Oct.	15	0.00		0.000%				72	0.02	0.021	0.005%	0.000	100%	1.000				
		Nov.-Dec.	9	0.00		0.000%				69	0.14	0.132	0.034%	0.000	64%	0.509				
		Jan.-Feb.	67	0.00	0.001	0.000%	0.000	100%	1.000	64	1.05	0.595	0.174%	0.001	100%	0.730				
		Mar.-Apr.	76	0.53	0.307	0.096%	0.001	100%	0.743	50	0.03	0.018	0.008%	0.000	100%	0.706				
		May-June	57	0.01	0.006	0.001%	0.000	28%	0.127	74	1.53	0.802	0.298%	0.002	89%	0.559				
		July-Aug.	171	0.28	0.081	0.074%	0.000	48%	0.176	63	4.14	1.506	0.716%	0.003	90%	0.403				

Table 6 (cont.). Ratio estimators and standard errors (s.e.) for the discarded pounds of 29 selected species or species groups, by area, observer-program year, depth, and 2-month period.

Standard errors cannot be calculated where there is only one tow in a category.

NOTE: RESULTS FOR CATEGORIES WITH FEWER THAN 10 TOWS SHOULD BE TREATED VERY CAUTIOUSLY.

Species	September 1, 2001 to August 31, 2002 (1st program year)										September 1, 2002 to August 31, 2003 (2nd program year)									
	Area	Depth group	Period	Number of tows	Discarded		Discarded lbs per lb of retained groundfish		Discard rate of each species		Number of tows	Discarded		Discarded lbs per lb of retained groundfish		Discard rate of each species				
					lb/hr	s.e.	ratio	s.e.	discard / catch	s.e.		lb/hr	s.e.	ratio	s.e.	discard / catch	s.e.			
Black Rockfish																				
	North of 40°10' N. lat. (near Cape Mendocino)																			
	0-75 fm	Sept.-Oct.	91	0.00		0.000%		0%		197	0.00		0.000%			0%				
		Nov.-Dec.	73	0.72	0.390	0.318%	0.002	100%	0.701	62	0.00		0.000%							
		Jan.-Feb.	8	0.00		0.000%		0%		4	0.00		0.000%							
		Mar.-Apr.	144	0.00		0.000%				179	0.00		0.000%			0%				
		May-June	470	0.00		0.000%				67	0.00		0.000%							
		July-Aug.	408	0.00		0.000%		0%		37	0.00		0.000%							
	75-150 fm	Sept.-Oct.	125	0.00		0.000%				42	0.00		0.000%			0%				
		Nov.-Dec.	18	0.00		0.000%				11	0.00		0.000%							
		Jan.-Feb.	29	0.00		0.000%				27	0.00		0.000%							
		Mar.-Apr.	142	0.00		0.000%				145	0.00		0.000%			0%				
		May-June	86	0.00		0.000%				12	0.00		0.000%							
		July-Aug.	89	0.00		0.000%		0%												
	>=150 fm	Sept.-Oct.	110	0.00		0.000%				155	0.00		0.000%							
		Nov.-Dec.	23	0.00		0.000%				113	0.00		0.000%							
		Jan.-Feb.	315	0.00		0.000%				173	0.00		0.000%							
		Mar.-Apr.	317	0.00		0.000%				300	0.00		0.000%							
		May-June	77	0.00		0.000%				302	0.00		0.000%							
		July-Aug.	20	0.00		0.000%		0%		195	0.00		0.000%							
	South of 40°10' N. lat. (near Cape Mendocino)																			
	0-75 fm	Sept.-Oct.	42	0.00		0.000%														
		Nov.-Dec.	4	0.00		0.000%														
		Jan.-Feb.	40	0.00		0.000%				8	0.00		0.000%							
		Mar.-Apr.	29	0.00		0.000%				31	0.00		0.000%							
		May-June	3	0.00		0.000%				60	0.00		0.000%							
		July-Aug.								73	0.00		0.000%							
	75-150 fm	Sept.-Oct.	60	0.00		0.000%														
		Nov.-Dec.	14	0.00		0.000%				3	0.00		0.000%							
		Jan.-Feb.	18	0.00		0.000%														
		Mar.-Apr.	8	0.00		0.000%														
		May-June	13	0.00		0.000%														
		July-Aug.	1	0.00		0.000%														
	>=150 fm	Sept.-Oct.	15	0.00		0.000%				72	0.00		0.000%							
		Nov.-Dec.	9	0.00		0.000%				69	0.00		0.000%							
		Jan.-Feb.	67	0.00		0.000%				64	0.00		0.000%							
		Mar.-Apr.	76	0.00		0.000%				50	0.00		0.000%							
		May-June	57	0.00		0.000%				74	0.00		0.000%							
		July-Aug.	171	0.00		0.000%				63	0.00		0.000%							

Table 6 (cont.). Ratio estimators and standard errors (s.e.) for the discarded pounds of 29 selected species or species groups, by area, observer-program year, depth, and 2-month period. Standard errors cannot be calculated where there is only one tow in a category.
NOTE: RESULTS FOR CATEGORIES WITH FEWER THAN 10 TOWS SHOULD BE TREATED VERY CAUTIOUSLY.

Species	September 1, 2001 to August 31, 2002 (1st program year)										September 1, 2002 to August 31, 2003 (2nd program year)									
	Area Depth group Period	Number of tows	Discarded		Discarded lbs per lb of retained groundfish		Discard rate of each species		Number of tows	Discarded		Discarded lbs per lb of retained groundfish		Discard rate of each species						
			lbs per hour	s.e.	ratio	s.e.	discard / catch	s.e.		lbs per hour	s.e.	ratio	s.e.	discard / catch	s.e.					
Bocaccio																				
North of 40°10' N. lat. (near Cape Mendocino)																				
0-75 fm		Sept.-Oct.	91	0.00		0.000%				197	0.00		0.000%							
		Nov.-Dec.	73	0.00		0.000%				62	0.00		0.000%							
		Jan.-Feb.	8	0.00		0.000%				4	0.00		0.000%							
		Mar.-Apr.	144	0.34	0.290	0.092%	0.001	97%	0.930	179	0.00		0.000%							
		May-June	470	0.00	0.001	0.000%	0.000	100%	1.000	67	0.00		0.000%							
		July-Aug.	408	0.00		0.000%		0%		37	0.00		0.000%							
75-150 fm		Sept.-Oct.	125	0.81	0.806	0.178%	0.002	98%	0.977	42	0.00		0.000%							
		Nov.-Dec.	18	0.00		0.000%				11	0.07	0.065	0.008%	0.000	100%	1.000				
		Jan.-Feb.	29	1.36	0.792	0.151%	0.001	100%	0.744	27	0.27	0.266	0.025%	0.000	100%	1.000				
		Mar.-Apr.	142	0.06	0.047	0.016%	0.000	51%	0.289	145	0.05	0.033	0.007%	0.000	100%	0.864				
		May-June	86	0.00		0.000%		0%		12	0.00		0.000%							
		July-Aug.	89	0.11	0.113	0.018%	0.000	66%	0.563											
>=150 fm		Sept.-Oct.	110	0.00		0.000%				155	0.00		0.000%							
		Nov.-Dec.	23	0.00		0.000%				113	0.57	0.320	0.171%	0.001	100%	0.728				
		Jan.-Feb.	315	0.09	0.038	0.020%	0.000	100%	0.579	173	0.00		0.000%							
		Mar.-Apr.	317	0.00		0.000%		0%		300	0.00		0.000%							
		May-June	77	0.00		0.000%				302	0.00		0.000%							
		July-Aug.	20	0.00		0.000%				195	0.00		0.000%							
South of 40°10' N. lat. (near Cape Mendocino)																				
0-75 fm		Sept.-Oct.	42	0.00		0.000%		0%												
		Nov.-Dec.	4	29.33	29.328	3.124%	0.031	100%	1.000											
		Jan.-Feb.	40	0.00		0.000%		0%		8	0.00		0.000%							
		Mar.-Apr.	29	1.72	1.043	0.273%	0.002	26%	0.156	31	2.15	1.944	0.667%	0.006	100%	0.984				
		May-June	3	0.00		0.000%		0%		60	0.09	0.061	0.028%	0.000	100%	0.865				
		July-Aug.								73	0.05	0.046	0.021%	0.000	100%	1.000				
75-150 fm		Sept.-Oct.	60	6.47	2.404	1.838%	0.007	92%	0.427											
		Nov.-Dec.	14	88.33	37.902	17.450%	0.083	100%	0.557	3	0.60	0.602	0.509%	0.005	100%	1.000				
		Jan.-Feb.	18	38.70	23.539	7.893%	0.048	81%	0.525											
		Mar.-Apr.	8	31.80	27.978	5.873%	0.052	75%	0.612											
		May-June	13	23.77	15.908	6.637%	0.044	51%	0.242											
		July-Aug.	1	0.00		0.000%														
>=150 fm		Sept.-Oct.	15	0.04	0.037	0.007%	0.000	100%	1.000	72	0.40	0.402	0.087%	0.001	100%	1.000				
		Nov.-Dec.	9	26.82	10.567	5.525%	0.022	100%	0.504	69	3.87	2.297	0.965%	0.006	100%	0.759				
		Jan.-Feb.	67	0.01	0.009	0.002%	0.000	1%	0.009	64	0.72	0.374	0.119%	0.001	100%	0.683				
		Mar.-Apr.	76	0.52	0.232	0.093%	0.000	100%	0.594	50	0.00		0.000%							
		May-June	57	0.00		0.000%				74	0.00		0.000%							
		July-Aug.	171	0.13	0.121	0.033%	0.000	100%	0.998	63	0.00		0.000%							

Table 6 (cont.). Ratio estimators and standard errors (s.e.) for the discarded pounds of 29 selected species or species groups, by area, observer-program year, depth, and 2-month period. Standard errors cannot be calculated where there is only one tow in a category.

NOTE: RESULTS FOR CATEGORIES WITH FEWER THAN 10 TOWS SHOULD BE TREATED VERY CAUTIOUSLY.

Species	Area	Depth group	Period	September 1, 2001 to August 31, 2002 (1st program year)						September 1, 2002 to August 31, 2003 (2nd program year)							
				Number of tows	Discarded		Discarded lbs per lb of retained groundfish		Discard rate of each species		Number of tows	Discarded		Discarded lbs per lb of retained groundfish		Discard rate of each species	
					lb/hr	s.e.	ratio	s.e.	discard / catch	s.e.		lb/hr	s.e.	ratio	s.e.	discard / catch	s.e.
Cabezon																	
		North of 40°10' N. lat. (near Cape Mendocino)															
		0-75 fm	Sept.-Oct.	91	0.31	0.171	0.121%	0.001	16%	0.059	197	0.00		0.000%		0%	
			Nov.-Dec.	73	0.00		0.000%		0%		62	0.00		0.000%			
			Jan.-Feb.	8	0.00		0.000%		0%		4	0.00		0.000%			
			Mar.-Apr.	144	0.00		0.000%		0%		179	0.00		0.000%			
			May-June	470	0.06	0.063	0.013%	0.000	100%	1.000	67	0.00		0.000%			
			July-Aug.	408	0.00		0.000%				37	0.00		0.000%			
		75-150 fm	Sept.-Oct.	125	0.15	0.147	0.032%	0.000	100%	1.000	42	0.00		0.000%			
			Nov.-Dec.	18	0.00		0.000%				11	0.00		0.000%			
			Jan.-Feb.	29	0.00		0.000%				27	0.00		0.000%			
			Mar.-Apr.	142	0.00		0.000%				145	0.00		0.000%			
			May-June	86	0.00		0.000%				12	0.00		0.000%			
			July-Aug.	89	0.00		0.000%										
		>=150 fm	Sept.-Oct.	110	0.00		0.000%				155	0.00		0.000%			
			Nov.-Dec.	23	0.00		0.000%				113	0.00		0.000%			
			Jan.-Feb.	315	0.00		0.000%				173	0.00		0.000%			
			Mar.-Apr.	317	0.00		0.000%				300	0.00		0.000%			
			May-June	77	0.00		0.000%				302	0.00		0.000%			
			July-Aug.	20	0.00		0.000%				195	0.00		0.000%			
		South of 40°10' N. lat. (near Cape Mendocino)															
		0-75 fm	Sept.-Oct.	42	3.63	1.721	1.202%	0.006	22%	0.069							
			Nov.-Dec.	4	45.27	20.495	4.823%	0.030	49%	0.221							
			Jan.-Feb.	40	4.35	1.490	0.580%	0.002	20%	0.049	8	6.14	1.548	30.449%	0.069	36%	0.060
			Mar.-Apr.	29	2.40	1.396	0.382%	0.002	29%	0.130	31	4.37	1.399	1.356%	0.005	10%	0.019
			May-June	3	0.00		0.000%		0%		60	0.05	0.052	0.017%	0.000	0%	0.002
			July-Aug.								73	1.82	0.717	0.813%	0.003	29%	0.086
		75-150 fm	Sept.-Oct.	60	0.00		0.000%										
			Nov.-Dec.	14	0.00		0.000%				3	0.00		0.000%			
			Jan.-Feb.	18	0.00		0.000%										
			Mar.-Apr.	8	0.00		0.000%										
			May-June	13	0.00		0.000%										
			July-Aug.	1	0.00		0.000%										
		>=150 fm	Sept.-Oct.	15	0.00		0.000%				72	0.00		0.000%			
			Nov.-Dec.	9	0.00		0.000%				69	0.00		0.000%			
			Jan.-Feb.	67	0.00		0.000%				64	0.00		0.000%		0%	
			Mar.-Apr.	76	0.00		0.000%				50	0.00		0.000%			
			May-June	57	0.00		0.000%				74	0.00		0.000%			
			July-Aug.	171	0.00		0.000%				63	0.00		0.000%			

Table 6 (cont.). Ratio estimators and standard errors (s.e.) for the discarded pounds of 29 selected species or species groups, by area, observer-program year, depth, and 2-month period. Standard errors cannot be calculated where there is only one tow in a category.

NOTE: RESULTS FOR CATEGORIES WITH FEWER THAN 10 TOWS SHOULD BE TREATED VERY CAUTIOUSLY.

Species	September 1, 2001 to August 31, 2002 (1st program year)								September 1, 2002 to August 31, 2003 (2nd program year)							
	Area Depth group Period	Number of tows	Discarded		Discarded lbs per lb of retained groundfish		Discard rate of each species		Number of tows	Discarded		Discarded lbs per lb of retained groundfish		Discard rate of each species		
			lb/hr	s.e.	ratio	s.e.	discard / catch	s.e.		lb/hr	s.e.	ratio	s.e.	discard / catch	s.e.	
Canary Rockfish																
North of 40°10' N. lat. (near Cape Mendocino)																
0-75 fm		Sept.-Oct.	91	0.90	0.436	0.353%	0.002	79%	0.416	197	0.97	0.494	0.134%	0.001	29%	0.140
		Nov.-Dec.	73	1.76	0.509	0.773%	0.002	100%	0.390	62	0.55	0.279	0.102%	0.001	17%	0.043
		Jan.-Feb.	8	2.45	1.613	1.332%	0.009	100%	0.822	4	15.27	15.270	2.187%	0.022	100%	1.000
		Mar.-Apr.	144	1.50	0.430	0.413%	0.001	50%	0.147	179	1.07	0.318	0.182%	0.001	62%	0.170
		May-June	470	0.66	0.290	0.140%	0.001	29%	0.090	67	0.10	0.072	0.019%	0.000	100%	0.896
		July-Aug.	408	0.81	0.259	0.184%	0.001	28%	0.086	37	0.24	0.143	0.038%	0.000	36%	0.139
75-150 fm		Sept.-Oct.	125	0.93	0.312	0.205%	0.001	32%	0.076	42	1.48	0.751	0.263%	0.001	33%	0.102
		Nov.-Dec.	18	6.78	2.387	0.743%	0.005	100%	0.444	11	23.91	18.990	3.103%	0.025	93%	0.828
		Jan.-Feb.	29	24.57	6.916	2.720%	0.015	100%	0.371	27	8.27	1.606	0.762%	0.002	75%	0.142
		Mar.-Apr.	142	3.34	0.568	0.828%	0.002	60%	0.105	145	6.45	1.430	0.910%	0.002	69%	0.158
		May-June	86	1.04	0.363	0.216%	0.001	27%	0.065	12	12.26	11.936	1.580%	0.015	87%	0.833
		July-Aug.	89	1.29	0.688	0.209%	0.001	29%	0.084							
>=150 fm		Sept.-Oct.	110	0.00		0.000%		0%		155	0.00		0.000%			
		Nov.-Dec.	23	0.00		0.000%				113	0.00		0.000%			
		Jan.-Feb.	315	0.01	0.008	0.003%	0.000	40%	0.269	173	0.00	0.003	0.001%	0.000	5%	0.022
		Mar.-Apr.	317	0.00		0.000%		0%		300	0.01	0.008	0.003%	0.000	72%	0.451
		May-June	77	0.00		0.000%				302	0.01	0.008	0.003%	0.000	78%	0.502
		July-Aug.	20	0.00		0.000%		0%		195	0.04	0.022	0.010%	0.000	100%	0.690
South of 40°10' N. lat. (near Cape Mendocino)																
0-75 fm		Sept.-Oct.	42	0.00		0.000%		0%								
		Nov.-Dec.	4	0.00		0.000%										
		Jan.-Feb.	40	0.02	0.018	0.002%	0.000	5%	0.048	8	0.00		0.000%			
		Mar.-Apr.	29	0.00		0.000%		0%		31	0.00		0.000%		0%	
		May-June	3	0.00		0.000%		0%		60	0.00		0.000%			
		July-Aug.								73	0.00		0.000%			
75-150 fm		Sept.-Oct.	60	0.13	0.079	0.038%	0.000	27%	0.140							
		Nov.-Dec.	14	0.00		0.000%				3	0.02	0.024	0.021%	0.000	100%	1.000
		Jan.-Feb.	18	0.00		0.000%		0%								
		Mar.-Apr.	8	0.00		0.000%		0%								
		May-June	13	0.35	0.239	0.098%	0.001	11%	0.055							
		July-Aug.	1	4.20		2.189%		100%								
>=150 fm		Sept.-Oct.	15	0.00		0.000%				72	0.00		0.000%			
		Nov.-Dec.	9	0.00		0.000%				69	0.00		0.000%			
		Jan.-Feb.	67	0.00		0.000%				64	0.00		0.000%			
		Mar.-Apr.	76	0.12	0.124	0.022%	0.000	96%	0.959	50	0.00		0.000%			
		May-June	57	0.00		0.000%		0%		74	0.00		0.000%			
		July-Aug.	171	0.02	0.019	0.006%	0.000	100%	0.982	63	0.00		0.000%			

Table 6 (cont.). Ratio estimators and standard errors (s.e.) for the discarded pounds of 29 selected species or species groups, by area, observer-program year, depth, and 2-month period. Standard errors cannot be calculated where there is only one tow in a category.
NOTE: RESULTS FOR CATEGORIES WITH FEWER THAN 10 TOWS SHOULD BE TREATED VERY CAUTIOUSLY.

Species	September 1, 2001 to August 31, 2002 (1st program year)										September 1, 2002 to August 31, 2003 (2nd program year)									
	Area Depth group Period	Number of tows	Discarded		Discarded lbs per lb of retained groundfish		Discard rate of each species		Number of tows	Discarded		Discarded lbs per lb of retained groundfish		Discard rate of each species						
			lbs per hour	s.e.	ratio	s.e.	discard / catch	s.e.		lbs per hour	s.e.	ratio	s.e.	discard / catch	s.e.					
Cowcod Rockfish																				
North of 40°10' N. lat. (near Cape Mendocino)																				
0-75 fm		Sept.-Oct.	91	0.00		0.000%				197	0.00		0.000%							
		Nov.-Dec.	73	0.00		0.000%				62	0.00		0.000%							
		Jan.-Feb.	8	0.00		0.000%				4	0.00		0.000%							
		Mar.-Apr.	144	0.00		0.000%				179	0.00		0.000%							
		May-June	470	0.00		0.000%				67	0.00		0.000%							
		July-Aug.	408	0.00		0.000%				37	0.00		0.000%							
75-150 fm		Sept.-Oct.	125	0.00		0.000%		0%		42	0.00		0.000%							
		Nov.-Dec.	18	0.00		0.000%				11	0.00		0.000%							
		Jan.-Feb.	29	0.00		0.000%				27	0.00		0.000%							
		Mar.-Apr.	142	0.00		0.000%				145	0.00		0.000%							
		May-June	86	0.00		0.000%				12	0.00		0.000%							
		July-Aug.	89	0.00		0.000%														
>=150 fm		Sept.-Oct.	110	0.00		0.000%				155	0.00		0.000%							
		Nov.-Dec.	23	0.00		0.000%				113	0.00		0.000%							
		Jan.-Feb.	315	0.00		0.000%				173	0.00		0.000%							
		Mar.-Apr.	317	0.00		0.000%				300	0.00		0.000%							
		May-June	77	0.00		0.000%				302	0.00		0.000%							
		July-Aug.	20	0.00		0.000%				195	0.00		0.000%							
South of 40°10' N. lat. (near Cape Mendocino)																				
0-75 fm		Sept.-Oct.	42	0.00		0.000%														
		Nov.-Dec.	4	0.00		0.000%														
		Jan.-Feb.	40	0.00		0.000%			8	0.00		0.000%								
		Mar.-Apr.	29	0.26	0.155	0.041%	0.000	100%	0.765	31	0.20	0.155	0.064%	0.000	100%	0.904				
		May-June	3	0.00		0.000%				60	0.01	0.012	0.004%	0.000	100%	1.000				
		July-Aug.								73	0.00	0.003	0.001%	0.000	100%	1.000				
75-150 fm		Sept.-Oct.	60	0.03	0.016	0.009%	0.000	100%	0.680											
		Nov.-Dec.	14	3.02	1.536	0.596%	0.003	100%	0.656	3	3.45	3.450	2.918%	0.029	100%	1.000				
		Jan.-Feb.	18	2.24	2.078	0.457%	0.004	100%	0.990											
		Mar.-Apr.	8	10.61	10.247	1.960%	0.019	100%	0.998											
		May-June	13	3.45	1.541	0.963%	0.004	100%	0.581											
		July-Aug.	1	0.00		0.000%														
>=150 fm		Sept.-Oct.	15	0.01	0.013	0.002%	0.000	100%	1.000	72	0.00		0.000%							
		Nov.-Dec.	9	1.20	1.197	0.247%	0.002	100%	1.000	69	0.00		0.000%							
		Jan.-Feb.	67	0.04	0.038	0.012%	0.000	100%	0.986	64	0.00		0.000%							
		Mar.-Apr.	76	0.13	0.127	0.023%	0.000	100%	1.000	50	0.00		0.000%							
		May-June	57	0.02	0.018	0.002%	0.000	100%	1.000	74	0.00		0.000%							
		July-Aug.	171	0.00		0.000%				63	0.00		0.000%							

Table 6 (cont.). Ratio estimators and standard errors (s.e.) for the discarded pounds of 29 selected species or species groups, by area, observer-program year, depth, and 2-month period. Standard errors cannot be calculated where there is only one tow in a category.

NOTE: RESULTS FOR CATEGORIES WITH FEWER THAN 10 TOWS SHOULD BE TREATED VERY CAUTIOUSLY.

Species	Area	Depth group	Period	September 1, 2001 to August 31, 2002 (1st program year)						September 1, 2002 to August 31, 2003 (2nd program year)							
				Number of tows	Discarded		Discarded lbs per lb of retained groundfish		Discard rate of each species		Number of tows	Discarded		Discarded lbs per lb of retained groundfish		Discard rate of each species	
					lb/hr	s.e.	ratio	s.e.	discard / catch	s.e.		lb/hr	s.e.	ratio	s.e.	discard / catch	s.e.
Darkblotched Rockfish																	
North of 40°10' N. lat. (near Cape Mendocino)																	
0-75 fm		Sept.-Oct.	91	0.24	0.197	0.094%	0.001	22%	0.174	197	0.41	0.193	0.056%	0.000	100%	0.63	
		Nov.-Dec.	73	0.00		0.000%				62	0.12	0.069	0.021%	0.000	85%	0.565	
		Jan.-Feb.	8	0.00		0.000%				4	0.02	0.020	0.003%	0.000	100%	1.000	
		Mar.-Apr.	144	0.23	0.103	0.064%	0.000	70%	0.320	179	0.24	0.118	0.041%	0.000	73%	0.359	
		May-June	470	0.39	0.108	0.082%	0.000	35%	0.111	67	1.30	0.687	0.255%	0.001	100%	0.691	
		July-Aug.	408	0.17	0.078	0.040%	0.000	71%	0.313	37	2.33	1.676	0.359%	0.003	100%	0.875	
75-150 fm		Sept.-Oct.	125	3.62	1.687	0.800%	0.004	44%	0.151	42	2.78	0.706	0.494%	0.001	100%	0.340	
		Nov.-Dec.	18	0.00		0.000%				11	3.66	2.557	0.476%	0.003	63%	0.437	
		Jan.-Feb.	29	15.73	13.217	1.741%	0.015	95%	0.883	27	4.27	1.360	0.393%	0.001	100%	0.435	
		Mar.-Apr.	142	7.37	3.581	1.825%	0.009	71%	0.375	145	4.91	1.241	0.693%	0.002	98%	0.336	
		May-June	86	9.86	4.233	2.053%	0.009	49%	0.162	12	6.00	4.233	0.773%	0.006	30%	0.177	
		July-Aug.	89	9.53	6.144	1.546%	0.010	98%	0.784								
>=150 fm		Sept.-Oct.	110	6.59	2.223	3.051%	0.010	87%	0.352	155	0.00	0.002	0.001%	0.000	100%	0.864	
		Nov.-Dec.	23	0.60	0.602	0.087%	0.001	15%	0.049	113	8.93	3.226	2.690%	0.010	85%	0.356	
		Jan.-Feb.	315	1.29	0.406	0.292%	0.001	35%	0.066	173	3.59	2.237	0.923%	0.006	54%	0.257	
		Mar.-Apr.	317	0.28	0.227	0.071%	0.001	14%	0.031	300	0.13	0.091	0.026%	0.000	22%	0.056	
		May-June	77	0.01	0.009	0.005%	0.000	0%	0.001	302	1.06	0.472	0.307%	0.001	42%	0.121	
		July-Aug.	20	0.41	0.413	0.096%	0.001	48%	0.327	195	2.07	0.633	0.482%	0.001	42%	0.118	
South of 40°10' N. lat. (near Cape Mendocino)																	
0-75 fm		Sept.-Oct.	42	0.00		0.000%											
		Nov.-Dec.	4	0.00		0.000%											
		Jan.-Feb.	40	0.00		0.000%				8	0.00		0.000%				
		Mar.-Apr.	29	0.00		0.000%				31	0.01	0.014	0.004%	0.000	100%	1.000	
		May-June	3	0.00		0.000%				60	0.00		0.000%				
		July-Aug.								73	0.00		0.000%				
75-150 fm		Sept.-Oct.	60	0.14	0.095	0.039%	0.000	88%	0.687								
		Nov.-Dec.	14	0.33	0.246	0.065%	0.000	100%	0.892	3	0.00		0.000%				
		Jan.-Feb.	18	1.70	1.174	0.346%	0.002	100%	0.850								
		Mar.-Apr.	8	0.00		0.000%		0%									
		May-June	13	0.69	0.485	0.193%	0.001	100%	0.858								
		July-Aug.	1	0.00		0.000%											
>=150 fm		Sept.-Oct.	15	0.00		0.000%		0%		72	0.01	0.006	0.001%	0.000	16%	0.071	
		Nov.-Dec.	9	0.00		0.000%				69	1.32	1.060	0.330%	0.003	100%	0.934	
		Jan.-Feb.	67	0.42	0.134	0.118%	0.000	100%	0.432	64	0.07	0.053	0.011%	0.000	100%	0.942	
		Mar.-Apr.	76	0.14	0.107	0.025%	0.000	85%	0.696	50	0.00		0.000%		0%		
		May-June	57	0.01	0.007	0.001%	0.000	2%	0.013	74	0.00	0.004	0.001%	0.000	21%	0.101	
		July-Aug.	171	0.00		0.000%		0%		63	0.21	0.203	0.037%	0.000	7%	0.039	

Table 6 (cont.). Ratio estimators and standard errors (s.e.) for the discarded pounds of 29 selected species or species groups, by area, observer-program year, depth, and 2-month period.

Standard errors cannot be calculated where there is only one tow in a category.

NOTE: RESULTS FOR CATEGORIES WITH FEWER THAN 10 TOWS SHOULD BE TREATED VERY CAUTIOUSLY.

Species	Area Depth group Period		September 1, 2001 to August 31, 2002 (1st program year)						September 1, 2002 to August 31, 2003 (2nd program year)							
			Number of tows	Discarded		Discarded lbs per lb of retained groundfish		Discard rate of each species		Number of tows	Discarded		Discarded lbs per lb of retained groundfish		Discard rate of each species	
				lb/hr	s.e.	ratio	s.e.	discard / catch	s.e.		lb/hr	s.e.	ratio	s.e.	discard / catch	s.e.
Dover sole	North of 40°10' N. lat. (near Cape Mendocino)															
	0-75 fm	Sept.-Oct.	91	24.93	12.638	9.780%	0.050	51%	0.284	197	6.88	1.134	0.951%	0.002	4%	0.006
		Nov.-Dec.	73	6.53	3.102	2.870%	0.014	100%	0.628	62	9.85	2.897	1.806%	0.006	7%	0.014
		Jan.-Feb.	8	0.17	0.174	0.095%	0.001	100%	1.000	4	5.85	3.618	0.838%	0.006	8%	0.064
		Mar.-Apr.	144	16.99	3.933	4.663%	0.011	44%	0.091	179	38.79	7.314	6.595%	0.013	48%	0.079
		May-June	470	20.49	2.922	4.331%	0.007	15%	0.018	67	10.04	1.627	1.964%	0.003	8%	0.015
		July-Aug.	408	17.91	3.116	4.064%	0.007	22%	0.037	37	64.73	24.576	9.988%	0.040	46%	0.156
	75-150 fm	Sept.-Oct.	125	103.20	17.883	22.831%	0.042	47%	0.062	42	38.93	15.233	6.911%	0.027	10%	0.016
		Nov.-Dec.	18	73.40	37.108	8.043%	0.056	100%	0.648	11	23.04	11.409	2.991%	0.015	8%	0.033
		Jan.-Feb.	29	6.10	3.830	0.675%	0.005	12%	0.109	27	17.48	4.514	1.611%	0.004	20%	0.054
		Mar.-Apr.	142	30.21	5.272	7.480%	0.014	20%	0.027	145	42.19	8.896	5.954%	0.013	49%	0.084
		May-June	86	21.12	5.636	4.396%	0.012	8%	0.012	12	17.15	8.583	2.210%	0.012	13%	0.050
		July-Aug.	89	39.43	12.861	6.400%	0.021	13%	0.017							
	>=150 fm	Sept.-Oct.	110	37.78	5.975	17.493%	0.029	44%	0.056	155	19.28	2.772	8.788%	0.013	20%	0.020
		Nov.-Dec.	23	43.72	14.691	6.315%	0.022	71%	0.242	113	15.83	3.088	4.770%	0.010	11%	0.023
		Jan.-Feb.	315	10.16	2.003	2.294%	0.005	6%	0.006	173	16.92	5.346	4.350%	0.014	9%	0.014
		Mar.-Apr.	317	17.28	4.569	4.354%	0.012	9%	0.009	300	23.18	6.954	4.629%	0.014	7%	0.007
		May-June	77	37.25	8.475	12.941%	0.032	25%	0.045	302	12.32	2.234	3.575%	0.007	7%	0.005
		July-Aug.	20	16.36	9.314	3.786%	0.022	10%	0.017	195	8.06	2.092	1.878%	0.005	4%	0.004
	South of 40°10' N. lat. (near Cape Mendocino)															
	0-75 fm	Sept.-Oct.	42	1.12	0.385	0.370%	0.001	100%	0.468							
		Nov.-Dec.	4	0.00		0.000%										
		Jan.-Feb.	40	2.23	1.375	0.297%	0.002	100%	0.781	8	0.00		0.000%			
		Mar.-Apr.	29	0.11	0.058	0.018%	0.000	60%	0.388	31	0.43	0.221	0.133%	0.001	100%	0.672
		May-June	3	0.00		0.000%				60	1.96	0.631	0.641%	0.002	85%	0.319
		July-Aug.								73	0.22	0.077	0.099%	0.000	100%	0.472
	75-150 fm	Sept.-Oct.	60	1.44	0.547	0.410%	0.002	100%	0.514							
		Nov.-Dec.	14	6.65	2.558	1.314%	0.006	100%	0.498	3	0.00		0.000%			
		Jan.-Feb.	18	5.90	3.446	1.204%	0.007	100%	0.741							
		Mar.-Apr.	8	2.07	1.122	0.383%	0.002	8%	0.035							
		May-June	13	23.09	10.268	6.449%	0.029	24%	0.102							
		July-Aug.	1	6.40		3.336%		15%								
	>=150 fm	Sept.-Oct.	15	79.14	63.517	15.133%	0.125	27%	0.122	72	17.49	5.652	3.788%	0.013	7%	0.011
		Nov.-Dec.	9	118.98	39.360	24.509%	0.081	100%	0.414	69	36.84	11.755	9.188%	0.029	20%	0.032
		Jan.-Feb.	67	110.94	43.255	31.310%	0.129	38%	0.105	64	24.16	8.297	4.003%	0.014	9%	0.017
		Mar.-Apr.	76	64.95	18.767	11.690%	0.036	21%	0.040	50	12.93	3.832	2.962%	0.009	6%	0.013
		May-June	57	21.42	7.212	2.972%	0.011	8%	0.019	74	39.02	12.735	7.596%	0.025	14%	0.019
		July-Aug.	171	16.72	2.560	4.375%	0.007	7%	0.008	63	39.49	8.366	6.830%	0.015	11%	0.016

Table 6 (cont.). Ratio estimators and standard errors (s.e.) for the discarded pounds of 29 selected species or species groups, by area, observer-program year, depth, and 2-month period. Standard errors cannot be calculated where there is only one tow in a category.
NOTE: RESULTS FOR CATEGORIES WITH FEWER THAN 10 TOWS SHOULD BE TREATED VERY CAUTIOUSLY.

Species	Area Depth group Period		September 1, 2001 to August 31, 2002 (1st program year)						September 1, 2002 to August 31, 2003 (2nd program year)							
			Number of tows	Discarded		Discarded lbs per lb of retained groundfish		Discard rate of each species		Number of tows	Discarded		Discarded lbs per lb of retained groundfish		Discard rate of each species	
				lb/hr	s.e.	ratio	s.e.	discard / catch	s.e.		lb/hr	s.e.	ratio	s.e.	discard / catch	s.e.
Flatfish species other than Dover, Arrowtooth, and Petrale																
North of 40°10' N. lat. (near Cape Mendocino)																
0-75 fm		Sept.-Oct.	91	96.54	37.924	37.877%	0.153	38%	0.080	197	73.55	10.849	10.164%	0.017	22%	0.022
		Nov.-Dec.	73	74.15	16.560	32.582%	0.072	29%	0.032	62	108.48	17.827	19.880%	0.037	27%	0.039
		Jan.-Feb.	8	22.48	6.872	12.231%	0.044	17%	0.047	4	78.63	31.537	11.263%	0.069	27%	0.091
		Mar.-Apr.	144	136.75	17.327	37.537%	0.052	46%	0.043	179	166.06	28.306	28.233%	0.051	39%	0.050
		May-June	470	149.23	12.510	31.545%	0.035	51%	0.036	67	93.94	13.478	18.377%	0.028	28%	0.027
		July-Aug.	408	144.86	11.862	32.865%	0.030	39%	0.023	37	91.54	21.254	14.125%	0.037	28%	0.066
75-150 fm		Sept.-Oct.	125	37.90	6.232	8.384%	0.015	35%	0.041	42	75.16	20.014	13.343%	0.037	50%	0.110
		Nov.-Dec.	18	13.43	5.404	1.472%	0.009	21%	0.061	11	120.94	49.604	15.696%	0.069	28%	0.113
		Jan.-Feb.	29	35.70	15.407	3.952%	0.025	18%	0.100	27	111.04	19.902	10.233%	0.020	20%	0.032
		Mar.-Apr.	142	128.28	14.518	31.761%	0.044	55%	0.064	145	189.60	34.700	26.759%	0.052	47%	0.067
		May-June	86	31.31	9.125	6.517%	0.020	35%	0.061	12	246.77	109.150	31.789%	0.150	42%	0.134
		July-Aug.	89	39.30	10.428	6.380%	0.017	38%	0.066							
>=150 fm		Sept.-Oct.	110	3.74	0.818	1.731%	0.004	48%	0.080	155	4.36	0.621	1.988%	0.003	51%	0.062
		Nov.-Dec.	23	3.15	1.092	0.456%	0.002	28%	0.091	113	5.22	0.750	1.571%	0.002	50%	0.075
		Jan.-Feb.	315	4.48	0.614	1.011%	0.001	27%	0.030	173	5.35	1.178	1.375%	0.003	19%	0.026
		Mar.-Apr.	317	8.59	1.992	2.164%	0.005	46%	0.080	300	3.19	0.407	0.637%	0.001	31%	0.039
		May-June	77	7.52	1.331	2.612%	0.005	50%	0.088	302	2.86	0.303	0.830%	0.001	25%	0.026
		July-Aug.	20	8.78	3.657	2.031%	0.009	28%	0.056	195	3.43	0.482	0.799%	0.001	14%	0.011
South of 40°10' N. lat. (near Cape Mendocino)																
0-75 fm		Sept.-Oct.	42	201.53	65.222	66.798%	0.244	46%	0.109							
		Nov.-Dec.	4	17.96	6.858	1.913%	0.011	2%	0.010							
		Jan.-Feb.	40	166.84	88.118	22.257%	0.124	19%	0.045	8	18.79	10.780	93.084%	0.527	49%	0.194
		Mar.-Apr.	29	33.84	16.401	5.384%	0.028	7%	0.018	31	280.23	67.754	87.084%	0.263	54%	0.121
		May-June	3	8.88	7.159	22.148%	0.159	26%	0.078	60	147.48	29.495	48.262%	0.110	50%	0.080
		July-Aug.								73	99.67	21.906	44.427%	0.105	35%	0.049
75-150 fm		Sept.-Oct.	60	49.40	13.747	14.033%	0.040	24%	0.032							
		Nov.-Dec.	14	90.39	28.618	17.856%	0.068	24%	0.095	3	107.67	84.055	91.092%	0.616	68%	0.413
		Jan.-Feb.	18	58.22	22.013	11.874%	0.046	24%	0.063							
		Mar.-Apr.	8	23.69	15.372	4.374%	0.029	22%	0.083							
		May-June	13	21.36	6.914	5.966%	0.019	24%	0.039							
		July-Aug.	1	9.47		4.934%		100%								
>=150 fm		Sept.-Oct.	15	3.66	2.429	0.700%	0.005	6%	0.019	72	3.75	0.714	0.812%	0.002	63%	0.162
		Nov.-Dec.	9	34.74	14.774	7.155%	0.031	44%	0.160	69	7.51	1.869	1.872%	0.005	23%	0.037
		Jan.-Feb.	67	6.96	1.642	1.965%	0.005	52%	0.115	64	9.15	4.168	1.517%	0.007	16%	0.046
		Mar.-Apr.	76	11.37	2.352	2.047%	0.005	28%	0.049	50	2.72	0.549	0.624%	0.001	24%	0.045
		May-June	57	8.29	2.298	1.151%	0.003	71%	0.187	74	3.05	0.541	0.594%	0.001	33%	0.105
		July-Aug.	171	3.39	0.501	0.888%	0.001	42%	0.059	63	3.25	0.926	0.561%	0.002	15%	0.017

Table 6 (cont.). Ratio estimators and standard errors (s.e.) for the discarded pounds of 29 selected species or species groups, by area, observer-program year, depth, and 2-month period. Standard errors cannot be calculated where there is only one tow in a category.

NOTE: RESULTS FOR CATEGORIES WITH FEWER THAN 10 TOWS SHOULD BE TREATED VERY CAUTIOUSLY.

Species	Area Depth group Period		September 1, 2001 to August 31, 2002 (1st program year)						September 1, 2002 to August 31, 2003 (2nd program year)								
			Number of tows	Discarded		Discarded lbs per lb of retained groundfish		Discard rate of each species		Number of tows	Discarded		Discarded lbs per lb of retained groundfish		Discard rate of each species		
				lb/hr	s.e.	ratio	s.e.	discard / catch	s.e.		lb/hr	s.e.	ratio	s.e.	discard / catch	s.e.	
Lingcod	North of 40°10' N. lat. (near Cape Mendocino)																
	0-75 fm	Sept.-Oct.	91	5.52	1.615	2.167%	0.007	70%	0.204	197	38.67	9.369	5.345%	0.014	83%	0.235	
		Nov.-Dec.	73	8.83	1.922	3.880%	0.008	92%	0.253	62	6.30	0.946	1.154%	0.002	52%	0.091	
		Jan.-Feb.	8	4.17	2.378	2.270%	0.013	71%	0.382	4	1.23	1.092	0.176%	0.002	11%	0.079	
		Mar.-Apr.	144	3.54	0.528	0.972%	0.002	40%	0.115	179	17.08	4.664	2.904%	0.008	67%	0.184	
		May-June	470	11.76	2.305	2.486%	0.005	66%	0.139	67	3.29	0.593	0.643%	0.001	61%	0.114	
		July-Aug.	408	15.29	1.460	3.468%	0.004	81%	0.092	37	19.20	4.916	2.962%	0.008	57%	0.147	
	75-150 fm	Sept.-Oct.	125	12.15	1.834	2.689%	0.004	67%	0.098	42	8.98	1.619	1.595%	0.003	70%	0.156	
		Nov.-Dec.	18	33.42	23.921	3.661%	0.030	95%	0.808	11	18.44	12.273	2.394%	0.016	77%	0.509	
		Jan.-Feb.	29	31.97	9.715	3.539%	0.020	99%	0.393	27	23.46	13.057	2.162%	0.012	55%	0.317	
		Mar.-Apr.	142	16.80	3.511	4.160%	0.009	79%	0.181	145	60.49	15.626	8.537%	0.023	84%	0.266	
		May-June	86	11.46	2.540	2.386%	0.006	65%	0.148	12	5.88	2.690	0.758%	0.004	81%	0.393	
		July-Aug.	89	36.44	6.995	5.915%	0.012	69%	0.158								
	>=150 fm	Sept.-Oct.	110	0.16	0.111	0.075%	0.001	45%	0.226	155	0.00		0.000%				
		Nov.-Dec.	23	1.39	0.498	0.201%	0.001	100%	0.477	113	0.42	0.218	0.126%	0.001	36%	0.120	
		Jan.-Feb.	315	0.63	0.128	0.143%	0.000	84%	0.234	173	0.37	0.099	0.094%	0.000	63%	0.198	
		Mar.-Apr.	317	0.30	0.138	0.075%	0.000	83%	0.443	300	0.05	0.032	0.011%	0.000	90%	0.630	
		May-June	77	0.05	0.033	0.018%	0.000	23%	0.132	302	0.21	0.138	0.060%	0.000	96%	0.782	
		July-Aug.	20	0.07	0.069	0.016%	0.000	1%	0.014	195	0.40	0.171	0.092%	0.000	75%	0.359	
	South of 40°10' N. lat. (near Cape Mendocino)																
	0-75 fm	Sept.-Oct.	42	2.28	0.690	0.757%	0.003	36%	0.094								
		Nov.-Dec.	4	9.08	6.253	0.967%	0.007	100%	0.844								
		Jan.-Feb.	40	4.70	3.716	0.627%	0.005	64%	0.454	8	0.65	0.450	3.198%	0.022	100%	0.848	
		Mar.-Apr.	29	6.41	1.969	1.020%	0.004	53%	0.159	31	6.24	1.396	1.938%	0.006	48%	0.112	
		May-June	3	1.02	1.018	2.538%	0.025	22%	0.224	60	14.51	3.720	4.747%	0.013	72%	0.205	
		July-Aug.								73	3.61	1.900	1.611%	0.009	74%	0.420	
	75-150 fm	Sept.-Oct.	60	9.53	3.869	2.707%	0.011	68%	0.261								
		Nov.-Dec.	14	84.69	39.596	16.731%	0.085	100%	0.606	3	10.44	10.440	8.832%	0.088	100%	1.000	
		Jan.-Feb.	18	10.58	4.133	2.157%	0.009	67%	0.252								
		Mar.-Apr.	8	60.05	38.492	11.089%	0.073	62%	0.456								
		May-June	13	5.97	2.275	1.668%	0.006	45%	0.114								
		July-Aug.	1	2.27		1.181%		100%									
	>=150 fm	Sept.-Oct.	15	2.63	1.033	0.503%	0.002	52%	0.210	72	0.42	0.410	0.091%	0.001	100%	0.999	
		Nov.-Dec.	9	147.86	56.272	30.457%	0.116	100%	0.485	69	6.29	3.540	1.569%	0.009	100%	0.727	
		Jan.-Feb.	67	1.24	0.338	0.350%	0.001	96%	0.338	64	2.81	1.191	0.466%	0.002	94%	0.502	
		Mar.-Apr.	76	3.26	1.574	0.586%	0.003	99%	0.623	50	0.00		0.000%				
		May-June	57	0.11	0.048	0.015%	0.000	100%	0.581	74	0.00		0.000%		0%		
		July-Aug.	171	0.22	0.158	0.058%	0.000	100%	0.872	63	0.04	0.034	0.007%	0.000	11%	0.040	

Table 6 (cont.). Ratio estimators and standard errors (s.e.) for the discarded pounds of 29 selected species or species groups, by area, observer-program year, depth, and 2-month period. Standard errors cannot be calculated where there is only one tow in a category.

NOTE: RESULTS FOR CATEGORIES WITH FEWER THAN 10 TOWS SHOULD BE TREATED VERY CAUTIOUSLY.

Species	Area	Depth group	Period	September 1, 2001 to August 31, 2002 (1st program year)						September 1, 2002 to August 31, 2003 (2nd program year)							
				Number of tows	Discarded		Discarded lbs per lb of retained groundfish		Discard rate of each species		Number of tows	Discarded		Discarded lbs per lb of retained groundfish		Discard rate of each species	
					lbs per hour	s.e.	ratio	s.e.	discard / catch	s.e.		lbs per hour	s.e.	ratio	s.e.	discard / catch	s.e.
Pacific hake																	
North of 40°10' N. lat. (near Cape Mendocino)																	
	0-75 fm	Sept.-Oct.	91	110.87	27.524	43.502%	0.117	100%	0.335	197	84.55	17.244	11.684%	0.026	100%	0.281	
		Nov.-Dec.	73	200.50	81.593	88.100%	0.357	100%	0.544	62	48.17	12.771	8.827%	0.025	100%	0.359	
		Jan.-Feb.	8	0.00		0.000%				4	1.67	1.454	0.239%	0.002	100%	0.969	
		Mar.-Apr.	144	27.53	12.135	7.558%	0.034	100%	0.591	179	111.78	24.409	19.005%	0.043	87%	0.238	
		May-June	470	196.57	20.908	41.551%	0.053	100%	0.145	67	177.13	39.923	34.649%	0.080	100%	0.312	
		July-Aug.	408	152.40	17.729	34.575%	0.042	95%	0.146	37	286.06	103.856	44.140%	0.169	100%	0.487	
	75-150 fm	Sept.-Oct.	125	264.79	42.142	58.580%	0.101	100%	0.220	42	50.38	11.752	8.945%	0.022	100%	1.000	
		Nov.-Dec.	18	180.35	118.959	19.761%	0.153	100%	1.000	11	232.57	129.589	30.185%	0.174	100%	0.708	
		Jan.-Feb.	29	13.31	8.647	1.473%	0.011	100%	0.813	27	0.58	0.581	0.054%	0.001	100%	1.000	
		Mar.-Apr.	142	8.75	3.252	2.166%	0.008	100%	0.505	145	221.22	59.450	31.222%	0.086	88%	0.837	
		May-June	86	16.02	4.884	3.334%	0.010	100%	0.327	12	406.83	260.246	52.407%	0.343	99%	0.782	
		July-Aug.	89	29.97	6.239	4.864%	0.011	74%	0.189								
	>=150 fm	Sept.-Oct.	110	28.56	6.865	13.227%	0.033	100%	0.329	155	4.38	0.952	1.998%	0.004	100%	0.300	
		Nov.-Dec.	23	86.36	27.472	12.475%	0.041	100%	0.425	113	41.66	7.912	12.552%	0.025	100%	0.250	
		Jan.-Feb.	315	23.43	4.438	5.291%	0.010	100%	0.261	173	15.28	3.787	3.930%	0.010	89%	0.273	
		Mar.-Apr.	317	9.20	2.366	2.318%	0.006	100%	0.356	300	9.43	2.214	1.883%	0.004	100%	0.324	
		May-June	77	3.72	1.213	1.293%	0.004	100%	0.440	302	4.01	0.663	1.165%	0.002	100%	0.228	
		July-Aug.	20	2.78	0.794	0.643%	0.002	100%	0.358	195	36.16	7.672	8.427%	0.018	100%	0.293	
South of 40°10' N. lat. (near Cape Mendocino)																	
	0-75 fm	Sept.-Oct.	42	0.75	0.505	0.248%	0.002	100%	0.839								
		Nov.-Dec.	4	8.83	8.834	0.941%	0.009	100%	1.000								
		Jan.-Feb.	40	0.83	0.438	0.111%	0.001	100%	0.685	8	0.00		0.000%				
		Mar.-Apr.	29	20.09	9.316	3.197%	0.016	100%	0.614	31	0.20	0.119	0.063%	0.000	7%	0.065	
		May-June	3	7.84	6.132	19.546%	0.133	100%	0.834	60	35.60	13.129	11.651%	0.045	100%	0.501	
		July-Aug.								73	9.21	4.177	4.107%	0.019	100%	0.605	
	75-150 fm	Sept.-Oct.	60	24.34	5.626	6.913%	0.017	99%	0.313								
		Nov.-Dec.	14	46.70	15.186	9.225%	0.036	100%	0.414	3	4.95	3.336	4.190%	0.021	100%	0.584	
		Jan.-Feb.	18	26.33	7.964	5.370%	0.017	100%	0.391								
		Mar.-Apr.	8	52.82	15.024	9.753%	0.033	100%	0.357								
		May-June	13	364.24	232.277	101.719%	0.648	100%	0.794								
		July-Aug.	1	1.33		0.695%		100%									
	>=150 fm	Sept.-Oct.	15	171.28	124.310	32.754%	0.249	100%	0.878	72	19.82	4.702	4.293%	0.011	100%	0.322	
		Nov.-Dec.	9	130.37	29.107	26.854%	0.061	100%	0.238	69	55.47	15.425	13.835%	0.039	100%	0.374	
		Jan.-Feb.	67	11.49	2.775	3.243%	0.009	100%	0.325	64	37.29	9.717	6.179%	0.017	100%	0.350	
		Mar.-Apr.	76	23.59	4.757	4.246%	0.010	100%	0.267	50	9.02	5.066	2.066%	0.012	100%	0.726	
		May-June	57	12.37	8.483	1.717%	0.012	100%	0.845	74	2.71	1.503	0.527%	0.003	100%	0.720	
		July-Aug.	171	5.27	1.061	1.379%	0.003	100%	1.000	63	22.12	8.804	3.826%	0.015	100%	0.533	

Table 6 (cont.). Ratio estimators and standard errors (s.e.) for the discarded pounds of 29 selected species or species groups, by area, observer-program year, depth, and 2-month period. Standard errors cannot be calculated where there is only one tow in a category.

NOTE: RESULTS FOR CATEGORIES WITH FEWER THAN 10 TOWS SHOULD BE TREATED VERY CAUTIOUSLY.

Species	Area	Depth group	Period	September 1, 2001 to August 31, 2002 (1st program year)						September 1, 2002 to August 31, 2003 (2nd program year)							
				Number of tows	Discarded lbs per hour		Discarded lbs per lb of retained groundfish		Discard rate of each species		Number of tows	Discarded lbs per hour		Discarded lbs per lb of retained groundfish		Discard rate of each species	
					lb/hr	s.e.	ratio	s.e.	discard / catch	s.e.		lb/hr	s.e.	ratio	s.e.	discard / catch	s.e.
Pacific Halibut																	
North of 40°10' N. lat. (near Cape Mendocino)																	
0-75 fm		Sept.-Oct.	91	8.34	3.690	3.271%	0.015	100%	0.590	197	13.90	3.249	1.921%	0.005	100%	0.322	
		Nov.-Dec.	73	3.14	0.887	1.380%	0.004	100%	0.379	62	2.89	1.091	0.530%	0.002	100%	0.509	
		Jan.-Feb.	8	1.91	1.906	1.037%	0.010	100%	1.000	4	2.77	1.653	0.397%	0.003	100%	0.753	
		Mar.-Apr.	144	16.29	2.161	4.470%	0.006	100%	0.183	179	18.21	2.802	3.096%	0.005	100%	0.208	
		May-June	470	24.64	2.600	5.209%	0.007	100%	0.143	67	5.11	1.447	0.999%	0.003	100%	0.391	
		July-Aug.	408	9.73	0.899	2.206%	0.002	100%	0.126	37	11.28	3.418	1.740%	0.006	100%	0.407	
75-150 fm		Sept.-Oct.	125	10.45	1.702	2.311%	0.004	100%	0.225	42	3.09	1.038	0.549%	0.002	100%	0.452	
		Nov.-Dec.	18	2.13	1.376	0.234%	0.002	100%	0.802	11	6.54	2.332	0.849%	0.003	100%	0.447	
		Jan.-Feb.	29	14.41	4.118	1.595%	0.009	100%	0.377	27	8.10	1.858	0.747%	0.002	100%	0.313	
		Mar.-Apr.	142	14.99	2.152	3.712%	0.006	100%	0.194	145	41.71	5.941	5.887%	0.009	100%	0.193	
		May-June	86	12.65	2.510	2.632%	0.006	100%	0.266	12	5.39	3.351	0.694%	0.004	100%	0.784	
		July-Aug.	89	25.91	7.273	4.206%	0.012	100%	0.381								
>=150 fm		Sept.-Oct.	110	16.31	10.677	7.554%	0.050	100%	0.820	155	0.00		0.000%				
		Nov.-Dec.	23	68.83	21.321	9.943%	0.032	100%	0.413	113	17.99	3.403	5.421%	0.011	100%	0.248	
		Jan.-Feb.	315	18.32	3.208	4.136%	0.007	100%	0.240	173	2.99	0.519	0.770%	0.001	100%	0.236	
		Mar.-Apr.	317	13.85	3.936	3.490%	0.010	100%	0.392	300	1.76	0.570	0.352%	0.001	100%	0.443	
		May-June	77	2.10	0.977	0.731%	0.003	100%	0.616	302	1.38	0.817	0.399%	0.002	100%	0.761	
		July-Aug.	20	0.64	0.503	0.147%	0.001	100%	0.926	195	2.58	0.731	0.601%	0.002	100%	0.390	
South of 40°10' N. lat. (near Cape Mendocino)																	
0-75 fm		Sept.-Oct.	42	0.00		0.000%											
		Nov.-Dec.	4	0.00		0.000%											
		Jan.-Feb.	40	0.00		0.000%				8	0.00		0.000%				
		Mar.-Apr.	29	0.00		0.000%				31	0.00		0.000%				
		May-June	3	0.00		0.000%				60	0.19	0.186	0.061%	0.001	100%	1.000	
		July-Aug.								73	0.00		0.000%				
75-150 fm		Sept.-Oct.	60	0.00		0.000%											
		Nov.-Dec.	14	0.00		0.000%				3	0.00		0.000%				
		Jan.-Feb.	18	0.59	0.587	0.120%	0.001	100%	1.000								
		Mar.-Apr.	8	1.85	1.848	0.341%	0.003	100%	1.000								
		May-June	13	0.00		0.000%											
		July-Aug.	1	0.00		0.000%											
>=150 fm		Sept.-Oct.	15	0.00		0.000%				72	0.00		0.000%				
		Nov.-Dec.	9	0.00		0.000%				69	0.00		0.000%				
		Jan.-Feb.	67	0.00		0.000%				64	0.00		0.000%				
		Mar.-Apr.	76	0.11	0.109	0.020%	0.000	100%	1.000	50	0.00		0.000%				
		May-June	57	0.00		0.000%				74	0.00		0.000%				
		July-Aug.	171	0.07	0.056	0.017%	0.000	100%	0.961	63	0.00		0.000%				

Table 6 (cont.). Ratio estimators and standard errors (s.e.) for the discarded pounds of 29 selected species or species groups, by area, observer-program year, depth, and 2-month period.

Standard errors cannot be calculated where there is only one tow in a category.

NOTE: RESULTS FOR CATEGORIES WITH FEWER THAN 10 TOWS SHOULD BE TREATED VERY CAUTIOUSLY.

Species Area Depth group Period			September 1, 2001 to August 31, 2002 (1st program year)								September 1, 2002 to August 31, 2003 (2nd program year)							
			Number of tows	Discarded lbs per hour		Discarded lbs per lb of retained groundfish		Discard rate of each species		Number of tows	Discarded lbs per hour		Discarded lbs per lb of retained groundfish		Discard rate of each species			
				lb/hr	s.e.	ratio	s.e.	discard / catch	s.e.		lb/hr	s.e.	ratio	s.e.	discard / catch	s.e.		
Petrale sole																		
North of 40°10' N. lat. (near Cape Mendocino)																		
0-75 fm	Sept.-Oct.	91	9.38	5.734	3.680%	0.023	17%	0.030	197	13.78	2.936	1.904%	0.004	24%	0.038			
	Nov.-Dec.	73	1.21	0.320	0.533%	0.001	4%	0.006	62	1.27	0.435	0.233%	0.001	4%	0.007			
	Jan.-Feb.	8	1.25	1.076	0.681%	0.006	16%	0.068	4	1.95	1.290	0.280%	0.002	4%	0.021			
	Mar.-Apr.	144	12.48	2.052	3.427%	0.006	15%	0.011	179	18.21	4.779	3.095%	0.008	14%	0.013			
	May-June	470	20.71	2.448	4.378%	0.006	18%	0.011	67	1.81	0.567	0.354%	0.001	1%	0.001			
	July-Aug.	408	10.46	1.400	2.374%	0.003	16%	0.010	37	16.52	7.285	2.549%	0.012	11%	0.016			
75-150 fm	Sept.-Oct.	125	6.43	2.471	1.423%	0.006	21%	0.032	42	7.84	3.023	1.393%	0.005	17%	0.028			
	Nov.-Dec.	18	2.59	1.191	0.284%	0.002	36%	0.108	11	14.91	7.415	1.935%	0.010	30%	0.095			
	Jan.-Feb.	29	12.94	10.115	1.432%	0.012	36%	0.146	27	1.29	0.497	0.119%	0.000	9%	0.021			
	Mar.-Apr.	142	6.79	0.985	1.680%	0.003	10%	0.013	145	11.13	3.653	1.571%	0.005	7%	0.006			
	May-June	86	10.20	5.079	2.122%	0.011	42%	0.139	12	17.59	14.523	2.265%	0.019	38%	0.193			
	July-Aug.	89	4.51	1.323	0.732%	0.002	11%	0.032										
>=150 fm	Sept.-Oct.	110	0.00		0.000%		0%		155	0.00		0.000%		0%				
	Nov.-Dec.	23	2.34	1.312	0.338%	0.002	0%	0.000	113	0.18	0.090	0.054%	0.000	0%	0.001			
	Jan.-Feb.	315	0.66	0.150	0.149%	0.000	1%	0.001	173	0.31	0.113	0.079%	0.000	0%	0.000			
	Mar.-Apr.	317	0.04	0.013	0.009%	0.000	2%	0.005	300	0.04	0.029	0.007%	0.000	1%	0.003			
	May-June	77	0.00	0.005	0.002%	0.000	17%	0.083	302	0.01	0.011	0.004%	0.000	39%	0.262			
	July-Aug.	20	0.00		0.000%		0%		195	0.02	0.018	0.005%	0.000	3%	0.008			
South of 40°10' N. lat. (near Cape Mendocino)																		
0-75 fm	Sept.-Oct.	42	0.60	0.260	0.199%	0.001	1%	0.002										
	Nov.-Dec.	4	0.88	0.883	0.094%	0.001	3%	0.010										
	Jan.-Feb.	40	2.77	2.396	0.369%	0.003	17%	0.057	8	0.01	0.008	0.042%	0.000	100%	1.000			
	Mar.-Apr.	29	0.57	0.379	0.091%	0.001	5%	0.010	31	1.00	0.432	0.310%	0.001	1%	0.004			
	May-June	3	0.00		0.000%		0%		60	9.48	3.015	3.101%	0.010	6%	0.010			
	July-Aug.								73	0.68	0.176	0.301%	0.001	2%	0.004			
75-150 fm	Sept.-Oct.	60	3.04	2.488	0.864%	0.007	2%	0.002										
	Nov.-Dec.	14	4.83	1.728	0.955%	0.004	5%	0.014	3	0.00		0.000%		0%				
	Jan.-Feb.	18	1.17	0.646	0.238%	0.001	3%	0.006										
	Mar.-Apr.	8	0.87	0.539	0.161%	0.001	7%	0.016										
	May-June	13	0.46	0.221	0.130%	0.001	2%	0.005										
	July-Aug.	1	3.43		1.789%		2%											
>=150 fm	Sept.-Oct.	15	0.00		0.000%		0%		72	0.16	0.153	0.035%	0.000	16%	0.057			
	Nov.-Dec.	9	0.75	0.749	0.154%	0.002	1%	0.002	69	0.07	0.033	0.017%	0.000	0%	0.000			
	Jan.-Feb.	67	0.09	0.062	0.026%	0.000	1%	0.004	64	0.09	0.052	0.015%	0.000	1%	0.003			
	Mar.-Apr.	76	0.09	0.050	0.016%	0.000	4%	0.026	50	0.00		0.000%		0%				
	May-June	57	0.00		0.000%		0%		74	0.00		0.000%						
	July-Aug.	171	0.02	0.010	0.004%	0.000	2%	0.012	63	0.00		0.000%		0%				

Table 6 (cont.). Ratio estimators and standard errors (s.e.) for the discarded pounds of 29 selected species or species groups, by area, observer-program year, depth, and 2-month period. Standard errors cannot be calculated where there is only one tow in a category.
NOTE: RESULTS FOR CATEGORIES WITH FEWER THAN 10 TOWS SHOULD BE TREATED VERY CAUTIOUSLY.

Species	Area Depth group Period		September 1, 2001 to August 31, 2002 (1st program year)							September 1, 2002 to August 31, 2003 (2nd program year)							
			Number of tows	Discarded		Discarded lbs per lb of retained groundfish		Discard rate of each species		Number of tows	Discarded		Discarded lbs per lb of retained groundfish		Discard rate of each species		
				lb/hr	s.e.	ratio	s.e.	discard / catch	s.e.		lb/hr	s.e.	ratio	s.e.	discard / catch	s.e.	
Rockfish - Nearshore species other than Black																	
North of 40°10' N. lat. (near Cape Mendocino)																	
0-75 fm		Sept.-Oct.	91	0.00	0.243	0.000%		0.001	100%	0.966	197	0.01	0.008	0.001%	0.000	100%	1.000
		Nov.-Dec.	73	0.28		0.124%					62	0.06	0.028	0.011%	0.000	100%	0.652
		Jan.-Feb.	8	0.00	0.000%				4	0.00	0.000%						
		Mar.-Apr.	144	0.00	0.000%				179	0.00	0.000%						
		May-June	470	0.00	0.000	0.000%		0.000	100%	1.000	67	0.00	0.000%				
		July-Aug.	408	0.00	0.000%				37	0.06	0.044	0.009%	0.000	100%	0.882		
75-150 fm		Sept.-Oct.	125	0.04	0.038	0.008%		0.000	100%	1.000	42	0.00	0.003	0.001%	0.000	100%	1.000
		Nov.-Dec.	18	0.00	0.000%				11	0.00	0.000%						
		Jan.-Feb.	29	0.15	0.122	0.017%		0.000	100%	0.940	27	0.01	0.006	0.001%	0.000	100%	1.000
		Mar.-Apr.	142	0.00	0.000%				145	0.01	0.010	0.001%	0.000	100%	1.000		
		May-June	86	0.00	0.000%				12	0.73	0.732	0.094%	0.001	100%	1.000		
		July-Aug.	89	0.00	0.000%												
>=150 fm		Sept.-Oct.	110	0.00	0.000%				155	0.00	0.000%						
		Nov.-Dec.	23	0.00	0.000%				113	0.00	0.000%						
		Jan.-Feb.	315	0.00	0.000%				173	0.00	0.000%						
		Mar.-Apr.	317	0.00	0.000%				300	0.00	0.000%						
		May-June	77	0.00	0.000%				302	0.00	0.001	0.000%	0.000	100%	0.894		
		July-Aug.	20	0.00	0.000%				195	0.00	0.000%						
South of 40°10' N. lat. (near Cape Mendocino)																	
0-75 fm		Sept.-Oct.	42	0.00	0.673	0.000%		0.001	100%	0.866	8	0.00		0.000%			
		Nov.-Dec.	4	0.94		0.100%											
		Jan.-Feb.	40	0.00	0.000%				0%		31	0.17	0.114	0.052%	0.000	100%	0.841
		Mar.-Apr.	29	0.08	0.052	0.012%		0.000	100%	0.848	60	0.00	0.001	0.000%	0.000	100%	1.000
		May-June	3	0.00	0.000%						73	0.02	0.008	0.007%	0.000	3%	0.020
		July-Aug.															
75-150 fm		Sept.-Oct.	60	0.60	0.429	0.171%		0.001	100%	0.869	3	0.49	0.455	0.418%	0.004	100%	0.974
		Nov.-Dec.	14	92.59	54.139	18.292%		0.112	100%	0.742							
		Jan.-Feb.	18	1.45	1.072	0.297%		0.002	100%	0.887							
		Mar.-Apr.	8	7.83	6.992	1.447%		0.013	100%	0.978							
		May-June	13	10.73	8.760	2.996%		0.024	100%	0.941							
		July-Aug.	1	0.00	0.000%												
>=150 fm		Sept.-Oct.	15	0.01	0.007	0.001%		0.000	100%	1.000	72	0.00	0.000%				
		Nov.-Dec.	9	0.00	0.000%						69	0.00	0.000%				
		Jan.-Feb.	67	0.01	0.008	0.002%		0.000	23%	0.146	64	0.00	0.000%				
		Mar.-Apr.	76	0.00	0.000%						50	0.00	0.000%				
		May-June	57	0.00	0.000%						74	0.00	0.000%				
		July-Aug.	171	0.00	0.000%						63	0.00	0.000%				

Table 6 (cont.). Ratio estimators and standard errors (s.e.) for the discarded pounds of 29 selected species or species groups, by area, observer-program year, depth, and 2-month period.

Standard errors cannot be calculated where there is only one tow in a category.

NOTE: RESULTS FOR CATEGORIES WITH FEWER THAN 10 TOWS SHOULD BE TREATED VERY CAUTIOUSLY.

Species	September 1, 2001 to August 31, 2002 (1st program year)										September 1, 2002 to August 31, 2003 (2nd program year)									
	Area Depth group Period	Number of tows	Discarded		Discarded lbs per lb of retained groundfish		Discard rate of each species		Number of tows	Discarded		Discarded lbs per lb of retained groundfish		Discard rate of each species						
			lbs per hour	s.e.	ratio	s.e.	discard / catch	s.e.		lbs per hour	s.e.	ratio	s.e.	discard / catch	s.e.					
Rockfish - Shelf species not listed individually																				
North of 40°10' N. lat. (near Cape Mendocino)																				
0-75 fm		Sept.-Oct.	91	1.81	1.122	0.710%	0.004	100%	0.786	197	0.72	0.345	0.100%	0.000	94%	0.565				
		Nov.-Dec.	73	0.17	0.089	0.077%	0.000	100%	0.670	62	1.92	1.126	0.352%	0.002	100%	0.751				
		Jan.-Feb.	8	0.00		0.000%				4	0.00		0.000%							
		Mar.-Apr.	144	0.18	0.046	0.048%	0.000	100%	0.357	179	1.07	0.509	0.183%	0.001	100%	0.629				
		May-June	470	0.65	0.251	0.137%	0.001	99%	0.519	67	1.02	0.381	0.200%	0.001	100%	0.508				
		July-Aug.	408	2.82	2.279	0.641%	0.005	100%	0.937	37	3.03	1.932	0.467%	0.003	100%	0.803				
75-150 fm		Sept.-Oct.	125	15.13	4.648	3.348%	0.010	100%	0.422	42	10.95	4.591	1.944%	0.008	100%	0.560				
		Nov.-Dec.	18	0.69	0.485	0.076%	0.001	100%	0.851	11	7.33	4.700	0.951%	0.006	100%	0.797				
		Jan.-Feb.	29	49.72	22.257	5.504%	0.035	100%	0.591	27	6.02	4.432	0.555%	0.004	90%	0.748				
		Mar.-Apr.	142	14.25	4.930	3.528%	0.012	100%	0.472	145	66.51	13.829	9.386%	0.020	100%	0.286				
		May-June	86	4.97	1.476	1.035%	0.003	57%	0.203	12	21.56	11.194	2.778%	0.015	100%	0.674				
		July-Aug.	89	14.28	9.433	2.318%	0.015	95%	0.776											
>=150 fm		Sept.-Oct.	110	0.26	0.136	0.119%	0.001	100%	0.694	155	0.00		0.000%							
		Nov.-Dec.	23	0.00		0.000%				113	1.27	0.480	0.384%	0.001	100%	0.508				
		Jan.-Feb.	315	0.29	0.089	0.065%	0.000	100%	0.422	173	0.11	0.052	0.029%	0.000	100%	0.623				
		Mar.-Apr.	317	0.13	0.057	0.032%	0.000	100%	0.591	300	0.06	0.026	0.012%	0.000	100%	0.568				
		May-June	77	0.19	0.123	0.067%	0.000	85%	0.620	302	0.14	0.060	0.039%	0.000	100%	0.594				
		July-Aug.	20	0.06	0.055	0.013%	0.000	100%	1.000	195	1.25	0.415	0.290%	0.001	87%	0.351				
South of 40°10' N. lat. (near Cape Mendocino)																				
0-75 fm		Sept.-Oct.	42	0.21	0.132	0.071%	0.000	4%	0.018											
		Nov.-Dec.	4	7.77	7.774	0.828%	0.008	47%	0.472											
		Jan.-Feb.	40	9.68	4.378	1.291%	0.006	94%	0.533	8	0.00		0.000%							
		Mar.-Apr.	29	22.09	21.578	3.514%	0.034	87%	0.828	31	1.92	1.186	0.596%	0.004	60%	0.380				
		May-June	3	0.39	0.394	0.984%	0.010	100%	1.000	60	2.26	1.385	0.738%	0.005	84%	0.580				
		July-Aug.								73	0.20	0.082	0.091%	0.000	20%	0.127				
75-150 fm		Sept.-Oct.	60	8.36	2.313	2.374%	0.007	20%	0.051											
		Nov.-Dec.	14	192.21	70.821	37.971%	0.160	79%	0.311	3	4.39	4.357	3.710%	0.037	100%	1.000				
		Jan.-Feb.	18	273.72	116.576	55.828%	0.243	63%	0.255											
		Mar.-Apr.	8	120.75	80.118	22.298%	0.151	28%	0.081											
		May-June	13	66.33	39.843	18.523%	0.111	50%	0.226											
		July-Aug.	1	0.60		0.313%		100%												
>=150 fm		Sept.-Oct.	15	11.44	10.193	2.187%	0.020	75%	0.666	72	1.35	1.218	0.293%	0.003	100%	0.982				
		Nov.-Dec.	9	3.49	2.601	0.719%	0.005	58%	0.323	69	2.52	1.457	0.627%	0.004	100%	0.744				
		Jan.-Feb.	67	0.92	0.567	0.259%	0.002	18%	0.115	64	0.06	0.030	0.011%	0.000	100%	0.627				
		Mar.-Apr.	76	15.52	14.392	2.794%	0.026	99%	0.980	50	0.00		0.000%							
		May-June	57	0.10	0.031	0.013%	0.000	10%	0.051	74	0.00		0.000%							
		July-Aug.	171	0.36	0.359	0.095%	0.001	100%	1.000	63	0.01	0.008	0.003%	0.000	60%	0.309				

Table 6 (cont.). Ratio estimators and standard errors (s.e.) for the discarded pounds of 29 selected species or species groups, by area, observer-program year, depth, and 2-month period. Standard errors cannot be calculated where there is only one tow in a category.

NOTE: RESULTS FOR CATEGORIES WITH FEWER THAN 10 TOWS SHOULD BE TREATED VERY CAUTIOUSLY.

Species	Area		September 1, 2001 to August 31, 2002 (1st program year)								September 1, 2002 to August 31, 2003 (2nd program year)							
			Number of tows	Discarded		Discarded lbs per lb of retained groundfish		Discard rate of each species		Number of tows	Discarded		Discarded lbs per lb of retained groundfish		Discard rate of each species			
				lb/hr	s.e.	ratio	s.e.	discard / catch	s.e.		lb/hr	s.e.	ratio	s.e.	discard / catch	s.e.		
Rockfish - Slope species other than Darkblotched and POP																		
North of 40°10' N. lat. (near Cape Mendocino)																		
0-75 fm		Sept.-Oct.	91	0.10	0.071	0.040%	0.000	100%	0.855	197	0.21	0.164	0.029%	0.000	100%	0.916		
		Nov.-Dec.	73	0.00		0.000%				62	0.03	0.031	0.006%	0.000	100%	1.000		
		Jan.-Feb.	8	0.00		0.000%				4	0.00		0.000%					
		Mar.-Apr.	144	0.01	0.004	0.001%	0.000	100%	0.871	179	0.00		0.000%					
		May-June	470	0.06	0.043	0.012%	0.000	100%	0.895	67	0.00		0.000%					
		July-Aug.	408	0.15	0.133	0.033%	0.000	100%	0.987	37	0.00		0.000%					
75-150 fm		Sept.-Oct.	125	19.43	9.866	4.299%	0.022	100%	0.669	42	0.81	0.540	0.143%	0.001	100%	0.833		
		Nov.-Dec.	18	5.04	3.799	0.552%	0.005	100%	0.897	11	0.00		0.000%					
		Jan.-Feb.	29	35.23	17.202	3.900%	0.026	100%	0.640	27	23.78	23.708	2.191%	0.022	100%	1.000		
		Mar.-Apr.	142	5.96	1.960	1.475%	0.005	99%	0.441	145	4.71	2.775	0.665%	0.004	100%	0.756		
		May-June	86	17.95	6.137	3.736%	0.013	100%	0.461	12	10.26	10.256	1.321%	0.013	97%	0.971		
		July-Aug.	89	15.81	7.905	2.566%	0.013	100%	0.658									
>=150 fm		Sept.-Oct.	110	1.33	0.463	0.618%	0.002	100%	0.471	155	0.02	0.022	0.010%	0.000	100%	1.000		
		Nov.-Dec.	23	0.53	0.528	0.076%	0.001	100%	1.000	113	9.31	3.028	2.804%	0.009	100%	0.440		
		Jan.-Feb.	315	3.10	1.122	0.700%	0.003	100%	0.493	173	2.42	0.810	0.623%	0.002	91%	0.387		
		Mar.-Apr.	317	1.20	0.522	0.303%	0.001	100%	0.583	300	1.77	1.310	0.354%	0.003	100%	0.890		
		May-June	77	2.94	1.659	1.020%	0.006	99%	0.715	302	3.26	1.591	0.945%	0.005	100%	0.648		
		July-Aug.	20	4.78	4.766	1.106%	0.011	100%	1.000	195	8.54	3.270	1.991%	0.008	100%	0.520		
South of 40°10' N. lat. (near Cape Mendocino)																		
0-75 fm		Sept.-Oct.	42	0.00		0.000%												
		Nov.-Dec.	4	0.00		0.000%												
		Jan.-Feb.	40	2.48	2.452	0.331%	0.003	94%	0.933	8	0.00		0.000%		0%			
		Mar.-Apr.	29	0.21	0.188	0.033%	0.000	0%	0.001	31	0.00		0.000%					
		May-June	3	0.00		0.000%				60	0.00		0.000%					
		July-Aug.								73	0.00		0.000%					
75-150 fm		Sept.-Oct.	60	0.91	0.298	0.258%	0.001	91%	0.371									
		Nov.-Dec.	14	0.25	0.253	0.050%	0.000	100%	1.000	3	0.35	0.284	0.299%	0.002	100%	0.847		
		Jan.-Feb.	18	18.16	6.616	3.703%	0.014	98%	0.460									
		Mar.-Apr.	8	21.30	16.393	3.933%	0.031	35%	0.257									
		May-June	13	1.07	0.581	0.300%	0.002	10%	0.070									
		July-Aug.	1	0.00		0.000%												
>=150 fm		Sept.-Oct.	15	36.70	34.163	7.018%	0.066	89%	0.843	72	1.18	0.410	0.256%	0.001	7%	0.025		
		Nov.-Dec.	9	8.57	3.456	1.766%	0.007	4%	0.011	69	36.78	15.353	9.172%	0.038	81%	0.384		
		Jan.-Feb.	67	6.29	3.159	1.775%	0.009	14%	0.042	64	22.45	11.385	3.720%	0.019	29%	0.088		
		Mar.-Apr.	76	27.74	7.547	4.994%	0.014	36%	0.126	50	0.98	0.600	0.225%	0.001	9%	0.043		
		May-June	57	6.55	2.446	0.908%	0.004	5%	0.023	74	0.47	0.238	0.092%	0.000	11%	0.045		
		July-Aug.	171	0.53	0.500	0.139%	0.001	8%	0.047	63	0.55	0.305	0.095%	0.001	7%	0.024		

Table 6 (cont.). Ratio estimators and standard errors (s.e.) for the discarded pounds of 29 selected species or species groups, by area, observer-program year, depth, and 2-month period. Standard errors cannot be calculated where there is only one tow in a category.
NOTE: RESULTS FOR CATEGORIES WITH FEWER THAN 10 TOWS SHOULD BE TREATED VERY CAUTIOUSLY.

Species	September 1, 2001 to August 31, 2002 (1st program year)										September 1, 2002 to August 31, 2003 (2nd program year)									
	Area Depth group Period	Number of tows	Discarded		Discarded lbs per lb of retained groundfish		Discard rate of each species		Number of tows	Discarded		Discarded lbs per lb of retained groundfish		Discard rate of each species						
			lbs per hour	lb/hr s.e.	ratio	s.e.	discard / catch	s.e.		lbs per hour	lb/hr s.e.	ratio	s.e.	discard / catch	s.e.					
Roundfish, other than Sablefish or hake																				
North of 40°10' N. lat. (near Cape Mendocino)																				
0-75 fm		Sept.-Oct.	91	0.09	0.052	0.036%	0.000	1%	0.003	197	31.31	13.590	4.326%	0.019	15%	0.05				
		Nov.-Dec.	73	5.51	2.144	2.423%	0.009	29%	0.104	62	19.11	5.724	3.502%	0.011	21%	0.060				
		Jan.-Feb.	8	12.70	7.739	6.907%	0.043	18%	0.108	4	56.35	35.468	8.072%	0.060	14%	0.111				
		Mar.-Apr.	144	5.39	2.857	1.478%	0.008	9%	0.020	179	4.11	1.173	0.698%	0.002	4%	0.006				
		May-June	470	0.98	0.296	0.208%	0.001	3%	0.005	67	0.03	0.026	0.006%	0.000	1%	0.002				
		July-Aug.	408	2.87	0.979	0.651%	0.002	4%	0.007	37	1.43	0.795	0.221%	0.001	1%	0.005				
75-150 fm		Sept.-Oct.	125	4.22	1.561	0.935%	0.004	63%	0.222	42	0.44	0.308	0.078%	0.001	57%	0.372				
		Nov.-Dec.	18	8.52	4.256	0.934%	0.006	12%	0.052	11	0.00		0.000%							
		Jan.-Feb.	29	13.01	3.654	1.440%	0.008	2%	0.018	27	72.74	16.386	6.704%	0.016	13%	0.017				
		Mar.-Apr.	142	7.83	2.354	1.938%	0.006	44%	0.113	145	6.44	1.466	0.909%	0.002	4%	0.008				
		May-June	86	0.96	0.957	0.199%	0.002	18%	0.128	12	0.17	0.171	0.022%	0.000	1%	0.005				
		July-Aug.	89	0.44	0.166	0.072%	0.000	2%	0.006											
>=150 fm		Sept.-Oct.	110	45.97	6.940	21.286%	0.034	82%	0.151	155	44.39	5.468	20.232%	0.026	78%	0.121				
		Nov.-Dec.	23	0.00		0.000%				113	37.34	8.337	11.249%	0.026	89%	0.248				
		Jan.-Feb.	315	18.52	3.008	4.183%	0.007	80%	0.159	173	17.96	4.844	4.618%	0.013	82%	0.275				
		Mar.-Apr.	317	29.53	3.326	7.439%	0.009	80%	0.117	300	24.50	3.356	4.893%	0.007	72%	0.123				
		May-June	77	35.22	9.956	12.235%	0.037	85%	0.304	302	21.13	5.241	6.131%	0.015	76%	0.211				
		July-Aug.	20	17.90	11.114	4.142%	0.026	100%	0.781	195	20.30	3.783	4.730%	0.009	66%	0.153				
South of 40°10' N. lat. (near Cape Mendocino)																				
0-75 fm		Sept.-Oct.	42	0.17	0.122	0.055%	0.000	100%	0.890											
		Nov.-Dec.	4	0.60	0.527	0.064%	0.001	100%	0.970											
		Jan.-Feb.	40	0.20	0.107	0.027%	0.000	100%	0.681	8	0.13	0.126	0.626%	0.006	100%	1.000				
		Mar.-Apr.	29	0.00	0.003	0.000%	0.000	100%	1.000	31	0.06	0.036	0.019%	0.000	100%	0.753				
		May-June	3	0.04	0.038	0.095%	0.001	100%	1.000	60	0.37	0.358	0.123%	0.001	100%	0.996				
		July-Aug.								73	0.00		0.000%							
75-150 fm		Sept.-Oct.	60	0.00		0.000%														
		Nov.-Dec.	14	0.00		0.000%				3	0.00		0.000%							
		Jan.-Feb.	18	0.00		0.000%														
		Mar.-Apr.	8	0.00		0.000%														
		May-June	13	0.00		0.000%														
		July-Aug.	1	0.00		0.000%														
>=150 fm		Sept.-Oct.	15	37.06	25.710	7.086%	0.052	38%	0.299	72	29.79	6.616	6.452%	0.015	82%	0.213				
		Nov.-Dec.	9	0.24	0.243	0.050%	0.000	100%	1.000	69	43.00	17.397	10.723%	0.043	93%	0.473				
		Jan.-Feb.	67	13.15	4.358	3.712%	0.013	98%	0.431	64	21.98	7.108	3.642%	0.012	81%	0.321				
		Mar.-Apr.	76	63.99	18.911	11.518%	0.036	99%	0.390	50	16.47	3.778	3.773%	0.009	58%	0.172				
		May-June	57	20.76	9.412	2.881%	0.013	54%	0.273	74	5.38	0.905	1.047%	0.002	77%	0.159				
		July-Aug.	171	20.10	2.542	5.261%	0.007	84%	0.127	63	11.09	5.174	1.918%	0.009	98%	0.600				

Table 6 (cont.). Ratio estimators and standard errors (s.e.) for the discarded pounds of 29 selected species or species groups, by area, observer-program year, depth, and 2-month period. Standard errors cannot be calculated where there is only one tow in a category.

NOTE: RESULTS FOR CATEGORIES WITH FEWER THAN 10 TOWS SHOULD BE TREATED VERY CAUTIOUSLY.

Species	Area	Depth group	Period	September 1, 2001 to August 31, 2002 (1st program year)						September 1, 2002 to August 31, 2003 (2nd program year)							
				Number of tows	Discarded		Discarded lbs per lb of retained groundfish		Discard rate of each species		Number of tows	Discarded		Discarded lbs per lb of retained groundfish		Discard rate of each species	
					lbs per hour	s.e.	ratio	s.e.	discard / catch	s.e.		lbs per hour	s.e.	ratio	s.e.	discard / catch	s.e.
Sablefish																	
	North of 40°10' N. lat. (near Cape Mendocino)																
	0-75 fm	Sept.-Oct.	91	91.70	52.585	35.978%	0.209	99%	0.724	197	22.17	8.971	3.064%	0.013	49%	0.193	
		Nov.-Dec.	73	3.62	3.271	1.590%	0.014	100%	0.983	62	1.56	0.697	0.286%	0.001	43%	0.177	
		Jan.-Feb.	8	0.00		0.000%				4	0.00		0.000%				
		Mar.-Apr.	144	9.05	2.649	2.484%	0.007	43%	0.126	179	14.58	11.145	2.478%	0.019	95%	0.834	
		May-June	470	63.83	17.659	13.493%	0.038	82%	0.275	67	3.72	1.705	0.728%	0.003	99%	0.604	
		July-Aug.	408	174.12	30.633	39.502%	0.071	97%	0.231	37	96.56	36.706	14.899%	0.059	64%	0.232	
	75-150 fm	Sept.-Oct.	125	63.02	11.520	13.942%	0.027	39%	0.054	42	21.86	6.025	3.881%	0.011	45%	0.124	
		Nov.-Dec.	18	13.83	8.025	1.516%	0.011	100%	0.734	11	13.41	5.641	1.741%	0.008	38%	0.157	
		Jan.-Feb.	29	22.50	16.791	2.491%	0.020	57%	0.374	27	1.47	0.501	0.136%	0.000	84%	0.333	
		Mar.-Apr.	142	85.44	16.164	21.153%	0.043	72%	0.160	145	17.35	3.141	2.448%	0.005	55%	0.145	
		May-June	86	185.54	94.049	38.618%	0.198	87%	0.512	12	11.76	5.385	1.515%	0.007	6%	0.029	
		July-Aug.	89	147.80	40.499	23.991%	0.067	75%	0.211								
	>=150 fm	Sept.-Oct.	110	11.06	3.251	5.120%	0.015	17%	0.019	155	23.44	5.686	10.681%	0.026	41%	0.062	
		Nov.-Dec.	23	54.24	17.850	7.835%	0.027	100%	0.440	113	53.80	8.844	16.209%	0.029	68%	0.102	
		Jan.-Feb.	315	24.01	3.220	5.422%	0.008	36%	0.032	173	40.31	6.259	10.366%	0.017	52%	0.075	
		Mar.-Apr.	317	28.76	4.903	7.246%	0.013	37%	0.037	300	22.05	2.663	4.404%	0.006	24%	0.015	
		May-June	77	22.09	4.910	7.674%	0.019	31%	0.043	302	12.37	1.663	3.589%	0.005	16%	0.010	
		July-Aug.	20	39.79	15.159	9.207%	0.037	36%	0.076	195	23.74	3.042	5.533%	0.008	26%	0.024	
	South of 40°10' N. lat. (near Cape Mendocino)																
	0-75 fm	Sept.-Oct.	42	0.64	0.436	0.212%	0.001	48%	0.280								
		Nov.-Dec.	4	6.89	6.890	0.734%	0.007	100%	1.000								
		Jan.-Feb.	40	10.48	3.888	1.398%	0.006	82%	0.348	8	0.00		0.000%				
		Mar.-Apr.	29	21.38	15.031	3.401%	0.024	45%	0.363	31	5.29	3.614	1.645%	0.011	97%	0.800	
		May-June	3	0.05	0.051	0.127%	0.001	100%	1.000	60	5.45	1.605	1.783%	0.006	83%	0.298	
		July-Aug.								73	11.76	3.618	5.240%	0.017	94%	0.378	
	75-150 fm	Sept.-Oct.	60	18.44	5.291	5.239%	0.015	82%	0.267								
		Nov.-Dec.	14	75.17	25.585	14.851%	0.059	100%	0.436	3	9.19	8.611	7.772%	0.071	98%	0.958	
		Jan.-Feb.	18	157.05	108.933	32.031%	0.223	78%	0.601								
		Mar.-Apr.	8	29.97	13.144	5.533%	0.026	74%	0.355								
		May-June	13	61.94	40.528	17.298%	0.113	62%	0.440								
		July-Aug.	1	2.80		1.459%		50%									
	>=150 fm	Sept.-Oct.	15	113.42	70.784	21.689%	0.146	83%	0.575	72	26.98	12.598	5.843%	0.028	40%	0.108	
		Nov.-Dec.	9	340.67	132.871	70.171%	0.275	100%	0.499	69	21.54	5.322	5.373%	0.013	42%	0.078	
		Jan.-Feb.	67	37.22	9.863	10.505%	0.031	57%	0.132	64	19.11	3.995	3.166%	0.007	28%	0.041	
		Mar.-Apr.	76	50.11	13.930	9.018%	0.027	50%	0.101	50	7.65	1.539	1.753%	0.004	11%	0.011	
		May-June	57	17.75	10.880	2.463%	0.015	28%	0.077	74	8.54	2.143	1.662%	0.004	9%	0.011	
		July-Aug.	171	19.38	2.379	5.071%	0.007	32%	0.029	63	23.94	8.627	4.141%	0.015	24%	0.047	

Table 6 (cont.). Ratio estimators and standard errors (s.e.) for the discarded pounds of 29 selected species or species groups, by area, observer-program year, depth, and 2-month period. Standard errors cannot be calculated where there is only one tow in a category.
NOTE: RESULTS FOR CATEGORIES WITH FEWER THAN 10 TOWS SHOULD BE TREATED VERY CAUTIOUSLY.

Species	September 1, 2001 to August 31, 2002 (1st program year)										September 1, 2002 to August 31, 2003 (2nd program year)							
	Area Depth group Period	Number of tows	Discarded lbs per hour		Discarded lbs per lb of retained groundfish		Discard rate of each species		Number of tows	Discarded lbs per hour		Discarded lbs per lb of retained groundfish		Discard rate of each species				
			lb/hr	s.e.	ratio	s.e.	discard / catch	s.e.		lb/hr	s.e.	ratio	s.e.	discard / catch	s.e.			
Salmon species																		
North of 40°10' N. lat. (near Cape Mendocino)																		
0-75 fm		Sept.-Oct.	91	0.57	0.184	0.222%	0.001	100%	0.440	197	1.16	0.237	0.160%	0.000	100%	0.281		
		Nov.-Dec.	73	1.16	0.350	0.509%	0.002	100%	0.407	62	1.97	0.601	0.361%	0.001	100%	0.413		
		Jan.-Feb.	8	0.78	0.776	0.422%	0.004	100%	1.000	4	4.53	2.904	0.649%	0.005	100%	0.798		
		Mar.-Apr.	144	1.38	0.695	0.378%	0.002	100%	0.666	179	3.53	1.351	0.600%	0.002	100%	0.518		
		May-June	470	0.08	0.028	0.018%	0.000	100%	0.455	67	0.16	0.129	0.031%	0.000	100%	0.942		
		July-Aug.	408	0.58	0.164	0.132%	0.000	100%	0.392	37	0.51	0.441	0.079%	0.001	100%	0.965		
75-150 fm		Sept.-Oct.	125	0.16	0.084	0.036%	0.000	94%	0.612	42	0.13	0.091	0.022%	0.000	100%	0.873		
		Nov.-Dec.	18	2.49	2.091	0.273%	0.002	100%	0.954	11	9.10	5.637	1.181%	0.007	100%	0.775		
		Jan.-Feb.	29	4.73	1.123	0.523%	0.003	100%	0.307	27	1.16	0.380	0.107%	0.000	100%	0.447		
		Mar.-Apr.	142	3.01	1.597	0.746%	0.004	100%	0.694	145	12.94	4.215	1.826%	0.006	100%	0.445		
		May-June	86	0.02	0.018	0.004%	0.000	100%	1.000	12	2.60	1.758	0.335%	0.002	100%	0.835		
		July-Aug.	89	0.00		0.000%												
>=150 fm		Sept.-Oct.	110	0.00		0.000%				155	0.00		0.000%					
		Nov.-Dec.	23	0.27	0.266	0.038%	0.000	100%	1.000	113	0.01	0.015	0.004%	0.000	100%	1.000		
		Jan.-Feb.	315	0.52	0.151	0.118%	0.000	100%	0.395	173	2.88	1.189	0.742%	0.003	100%	0.555		
		Mar.-Apr.	317	0.84	0.525	0.211%	0.001	100%	0.794	300	0.00	0.001	0.000%	0.000	100%	1.000		
		May-June	77	0.00		0.000%				302	0.00		0.000%					
		July-Aug.	20	0.00		0.000%				195	0.00		0.000%					
South of 40°10' N. lat. (near Cape Mendocino)																		
0-75 fm		Sept.-Oct.	42	0.17	0.086	0.057%	0.000	100%	0.658									
		Nov.-Dec.	4	0.00		0.000%												
		Jan.-Feb.	40	0.42	0.231	0.056%	0.000	75%	0.419	8	0.06	0.059	0.292%	0.003	100%	1.000		
		Mar.-Apr.	29	0.38	0.266	0.060%	0.000	100%	0.863	31	0.16	0.155	0.048%	0.000	100%	1.000		
		May-June	3	0.61	0.611	1.523%	0.015	100%	1.000	60	0.22	0.090	0.071%	0.000	100%	0.555		
		July-Aug.								73	0.40	0.175	0.178%	0.001	100%	0.588		
75-150 fm		Sept.-Oct.	60	0.07	0.052	0.021%	0.000	100%	0.869									
		Nov.-Dec.	14	0.91	0.496	0.179%	0.001	100%	0.700	3	0.00		0.000%					
		Jan.-Feb.	18	1.13	0.812	0.230%	0.002	100%	0.873									
		Mar.-Apr.	8	0.22	0.219	0.040%	0.000	100%	1.000									
		May-June	13	0.04	0.044	0.012%	0.000	100%	1.000									
		July-Aug.	1	1.27		0.660%		100%										
>=150 fm		Sept.-Oct.	15	0.00		0.000%				72	0.00		0.000%					
		Nov.-Dec.	9	0.00		0.000%				69	0.00		0.000%					
		Jan.-Feb.	67	0.02	0.020	0.006%	0.000	100%	1.000	64	0.00		0.000%					
		Mar.-Apr.	76	0.00		0.000%				50	0.00		0.000%					
		May-June	57	0.00		0.000%				74	0.02	0.016	0.003%	0.000	100%	1.000		
		July-Aug.	171	0.02	0.013	0.004%	0.000	100%	0.948	63	0.00		0.000%					

Table 6 (cont.). Ratio estimators and standard errors (s.e.) for the discarded pounds of 29 selected species or species groups, by area, observer-program year, depth, and 2-month period. Standard errors cannot be calculated where there is only one tow in a category.

NOTE: RESULTS FOR CATEGORIES WITH FEWER THAN 10 TOWS SHOULD BE TREATED VERY CAUTIOUSLY.

Species	September 1, 2001 to August 31, 2002 (1st program year)										September 1, 2002 to August 31, 2003 (2nd program year)									
	Area	Depth group	Period	Number of tows	Discarded lbs per hour		Discarded lbs per lb of retained groundfish		Discard rate of each species		Number of tows	Discarded lbs per hour		Discarded lbs per lb of retained groundfish		Discard rate of each species				
					lb/hr	s.e.	ratio	s.e.	discard / catch	s.e.		lb/hr	s.e.	ratio	s.e.	discard / catch	s.e.			
Thornyheads - Longspine																				
North of 40°10' N. lat. (near Cape Mendocino)																				
0-75 fm		Sept.-Oct.	91	0.00	0.000%		0%		197	0.00	0.000%		0%							
		Nov.-Dec.	73	0.00	0.000%				62	0.00	0.000%									
		Jan.-Feb.	8	0.00	0.000%				4	0.00	0.000%									
		Mar.-Apr.	144	0.00	0.000%		0%		179	0.00	0.000%									
		May-June	470	0.00	0.000%		0%		67	0.00	0.000%									
		July-Aug.	408	0.00	0.000%		0%		37	0.00	0.000%									
75-150 fm		Sept.-Oct.	125	0.00	0.000%		0%		42	0.00	0.000%		0%							
		Nov.-Dec.	18	0.00	0.000%				11	0.00	0.000%									
		Jan.-Feb.	29	0.00	0.000%				27	0.00	0.000%									
		Mar.-Apr.	142	0.13	0.106	0.033%	0.000	48% 0.261	145	0.01	0.013	0.002%	0.000	100% 0.990						
		May-June	86	0.15	0.134	0.032%	0.000	43% 0.239	12	0.00	0.000%									
		July-Aug.	89	0.00	0.000%		0%													
>=150 fm		Sept.-Oct.	110	11.20	2.718	5.188%	0.013	22% 0.033	155	8.39	1.061	3.825%	0.005	10% 0.008						
		Nov.-Dec.	23	0.14	0.119	0.020%	0.000	100% 0.962	113	8.23	2.048	2.478%	0.006	12% 0.018						
		Jan.-Feb.	315	3.23	0.568	0.730%	0.001	8% 0.010	173	4.60	1.662	1.183%	0.004	23% 0.048						
		Mar.-Apr.	317	9.68	1.438	2.439%	0.004	12% 0.010	300	10.33	2.080	2.064%	0.004	13% 0.013						
		May-June	77	7.86	2.568	2.730%	0.009	9% 0.017	302	2.35	0.555	0.683%	0.002	4% 0.003						
		July-Aug.	20	4.39	2.676	1.016%	0.006	8% 0.035	195	5.16	1.503	1.202%	0.004	9% 0.012						
South of 40°10' N. lat. (near Cape Mendocino)																				
0-75 fm		Sept.-Oct.	42	0.00	0.000%															
		Nov.-Dec.	4	0.00	0.000%															
		Jan.-Feb.	40	0.00	0.000%				8	0.00	0.000%									
		Mar.-Apr.	29	0.00	0.000%				31	0.00	0.000%									
		May-June	3	0.00	0.000%				60	0.00	0.000%									
		July-Aug.							73	0.00	0.000%		0%							
75-150 fm		Sept.-Oct.	60	0.00	0.000%															
		Nov.-Dec.	14	0.00	0.000%				3	0.00	0.000%									
		Jan.-Feb.	18	0.00	0.000%															
		Mar.-Apr.	8	0.05	0.047	0.009%	0.000	100% 1.000												
		May-June	13	0.00	0.000%		0%													
		July-Aug.	1	0.00	0.000%															
>=150 fm		Sept.-Oct.	15	7.45	4.441	1.425%	0.009	9% 0.063	72	6.24	2.280	1.352%	0.005	6% 0.009						
		Nov.-Dec.	9	0.00	0.000%				69	21.30	6.383	5.311%	0.016	20% 0.038						
		Jan.-Feb.	67	5.41	1.964	1.526%	0.006	8% 0.012	64	3.72	1.521	0.617%	0.003	9% 0.019						
		Mar.-Apr.	76	14.39	4.085	2.591%	0.008	15% 0.029	50	1.52	0.405	0.348%	0.001	2% 0.005						
		May-June	57	6.21	3.283	0.861%	0.005	5% 0.010	74	5.97	1.424	1.162%	0.003	4% 0.004						
		July-Aug.	171	10.03	2.222	2.624%	0.006	12% 0.013	63	5.97	1.831	1.032%	0.003	6% 0.011						

Table 6 (cont.). Ratio estimators and standard errors (s.e.) for the discarded pounds of 29 selected species or species groups, by area, observer-program year, depth, and 2-month period. Standard errors cannot be calculated where there is only one tow in a category.
NOTE: RESULTS FOR CATEGORIES WITH FEWER THAN 10 TOWS SHOULD BE TREATED VERY CAUTIOUSLY.

Species Area Depth group Period			September 1, 2001 to August 31, 2002 (1st program year)						September 1, 2002 to August 31, 2003 (2nd program year)							
			Number of tows	Discarded lbs per hour		Discarded lbs per lb of retained groundfish		Discard rate of each species		Number of tows	Discarded lbs per hour		Discarded lbs per lb of retained groundfish		Discard rate of each species	
				lb/hr	s.e.	ratio	s.e.	discard / catch	s.e.		lb/hr	s.e.	ratio	s.e.	discard / catch	s.e.
Thornyheads - Shortspine																
North of 40°10' N. lat. (near Cape Mendocino)																
0-75 fm	Sept.-Oct.	91	0.12	0.093	0.046%	0.000	9%	0.067	197	0.00		0.000%		0%		
	Nov.-Dec.	73	0.00		0.000%				62	0.00		0.000%				
	Jan.-Feb.	8	0.00		0.000%				4	0.00		0.000%				
	Mar.-Apr.	144	0.00	0.001	0.000%	0.000	0%	0.001	179	0.00		0.000%		0%		
	May-June	470	0.02	0.016	0.005%	0.000	11%	0.073	67	0.00		0.000%		0%		
	July-Aug.	408	0.03	0.027	0.006%	0.000	13%	0.046	37	0.03	0.031	0.005%	0.000	6%	0.032	
75-150 fm	Sept.-Oct.	125	14.30	3.817	3.163%	0.009	69%	0.180	42	0.02	0.010	0.003%	0.000	1%	0.002	
	Nov.-Dec.	18	0.00		0.000%				11	0.00		0.000%		0%		
	Jan.-Feb.	29	3.14	1.472	0.348%	0.002	22%	0.115	27	0.00		0.000%				
	Mar.-Apr.	142	2.25	0.953	0.558%	0.002	31%	0.105	145	0.01	0.004	0.001%	0.000	3%	0.016	
	May-June	86	2.22	1.170	0.461%	0.002	65%	0.325	12	0.00		0.000%				
	July-Aug.	89	12.38	6.517	2.009%	0.011	46%	0.182								
>=150 fm	Sept.-Oct.	110	5.67	1.162	2.626%	0.006	38%	0.052	155	1.07	0.312	0.488%	0.001	5%	0.004	
	Nov.-Dec.	23	0.86	0.285	0.124%	0.000	100%	0.444	113	5.10	1.169	1.538%	0.004	19%	0.022	
	Jan.-Feb.	315	4.52	0.864	1.021%	0.002	27%	0.028	173	3.42	1.144	0.880%	0.003	23%	0.035	
	Mar.-Apr.	317	5.24	1.093	1.321%	0.003	23%	0.020	300	1.95	0.337	0.390%	0.001	8%	0.007	
	May-June	77	2.39	0.906	0.829%	0.003	9%	0.015	302	4.60	0.761	1.333%	0.002	20%	0.016	
	July-Aug.	20	4.39	3.746	1.016%	0.009	12%	0.033	195	13.88	2.211	3.234%	0.005	48%	0.058	
South of 40°10' N. lat. (near Cape Mendocino)																
0-75 fm	Sept.-Oct.	42	0.00		0.000%											
	Nov.-Dec.	4	0.00		0.000%											
	Jan.-Feb.	40	0.00		0.000%				8	0.00		0.000%				
	Mar.-Apr.	29	0.00		0.000%				31	0.00		0.000%				
	May-June	3	0.00		0.000%				60	0.00		0.000%				
	July-Aug.								73	0.00		0.000%		0%		
75-150 fm	Sept.-Oct.	60	0.25	0.074	0.071%	0.000	99%	0.396								
	Nov.-Dec.	14	0.00		0.000%				3	0.00		0.000%				
	Jan.-Feb.	18	1.40	1.031	0.286%	0.002	96%	0.831								
	Mar.-Apr.	8	0.00		0.000%											
	May-June	13	0.67	0.495	0.187%	0.001	5%	0.030								
	July-Aug.	1	0.00		0.000%											
>=150 fm	Sept.-Oct.	15	1.79	0.833	0.343%	0.002	9%	0.052	72	7.11	3.023	1.540%	0.007	18%	0.030	
	Nov.-Dec.	9	17.99	9.547	3.705%	0.020	100%	0.679	69	3.81	1.103	0.951%	0.003	13%	0.023	
	Jan.-Feb.	67	16.76	4.265	4.730%	0.014	42%	0.070	64	12.08	3.148	2.001%	0.005	20%	0.033	
	Mar.-Apr.	76	18.01	4.919	3.242%	0.009	42%	0.090	50	1.49	0.573	0.341%	0.001	3%	0.005	
	May-June	57	0.59	0.237	0.082%	0.000	2%	0.003	74	4.61	1.591	0.897%	0.003	15%	0.016	
	July-Aug.	171	2.95	0.574	0.771%	0.002	12%	0.012	63	2.77	0.938	0.479%	0.002	9%	0.012	

Table 6 (cont.). Ratio estimators and standard errors (s.e.) for the discarded pounds of 29 selected species or species groups, by area, observer-program year, depth, and 2-month period. Standard errors cannot be calculated where there is only one tow in a category.
NOTE: RESULTS FOR CATEGORIES WITH FEWER THAN 10 TOWS SHOULD BE TREATED VERY CAUTIOUSLY.

Species	September 1, 2001 to August 31, 2002 (1st program year)								September 1, 2002 to August 31, 2003 (2nd program year)							
	Area Depth group Period	Number of tows	Discarded		Discarded lbs per lb of retained groundfish		Discard rate of each species		Number of tows	Discarded		Discarded lbs per lb of retained groundfish		Discard rate of each species		
			lbs per hour	s.e.	ratio	s.e.	discard / catch	s.e.		lbs per hour	s.e.	ratio	s.e.	discard / catch	s.e.	
Thornyheads - Unidentified																
North of 40°10' N. lat. (near Cape Mendocino)																
0-75 fm	Sept.-Oct.	91	0.00		0.000%				197	0.00		0.000%				
	Nov.-Dec.	73	0.00		0.000%				62	0.00		0.000%				
	Jan.-Feb.	8	0.00		0.000%				4	0.00		0.000%				
	Mar.-Apr.	144	0.00		0.000%				179	0.00		0.000%				
	May-June	470	0.00		0.000%				67	0.00		0.000%				
	July-Aug.	408	0.00		0.000%				37	0.00		0.000%				
75-150 fm	Sept.-Oct.	125	0.04	0.041	0.009%	0.000	5% 0.034	42	0.00		0.000%					
	Nov.-Dec.	18	2.07	2.071	0.227%	0.002	100% 1.000	11	0.00		0.000%					
	Jan.-Feb.	29	0.00		0.000%			27	0.45	0.450	0.041%	0.000	100%	1.000		
	Mar.-Apr.	142	0.01	0.008	0.002%	0.000	0% 0.002	145	0.00		0.000%					
	May-June	86	0.76	0.445	0.157%	0.001	31% 0.128	12	0.00		0.000%					
	July-Aug.	89	0.00		0.000%		0%									
≥150 fm	Sept.-Oct.	110	7.13	2.086	3.303%	0.010	30% 0.069	155	16.22	1.941	7.392%	0.009	100%	0.163		
	Nov.-Dec.	23	0.00		0.000%			113	19.89	5.078	5.994%	0.016	70%	0.249		
	Jan.-Feb.	315	7.37	1.325	1.665%	0.003	51% 0.118	173	7.69	1.528	1.976%	0.004	77%	0.209		
	Mar.-Apr.	317	13.92	2.107	3.506%	0.006	68% 0.118	300	15.60	1.915	3.116%	0.004	88%	0.140		
	May-June	77	17.39	3.999	6.043%	0.015	98% 0.293	302	23.36	2.383	6.779%	0.007	100%	0.137		
	July-Aug.	20	35.29	27.418	8.168%	0.064	67% 0.463	195	23.42	3.948	5.458%	0.010	71%	0.170		
South of 40°10' N. lat. (near Cape Mendocino)																
0-75 fm	Sept.-Oct.	42	0.00		0.000%											
	Nov.-Dec.	4	0.00		0.000%											
	Jan.-Feb.	40	0.00		0.000%			8	0.00		0.000%					
	Mar.-Apr.	29	0.00		0.000%			31	0.00		0.000%					
	May-June	3	0.00		0.000%			60	0.00		0.000%					
	July-Aug.							73	0.00		0.000%					
75-150 fm	Sept.-Oct.	60	0.00		0.000%											
	Nov.-Dec.	14	0.00		0.000%			3	0.00		0.000%					
	Jan.-Feb.	18	0.00		0.000%											
	Mar.-Apr.	8	0.00		0.000%											
	May-June	13	1.37	1.367	0.382%	0.004	100% 1.000									
	July-Aug.	1	0.00		0.000%											
≥150 fm	Sept.-Oct.	15	0.00		0.000%			72	4.33	1.424	0.937%	0.003	23%	0.084		
	Nov.-Dec.	9	4.77	4.467	0.982%	0.009	100% 0.992	69	12.76	5.339	3.181%	0.013	100%	0.559		
	Jan.-Feb.	67	20.62	6.442	5.818%	0.020	100% 0.423	64	7.42	3.243	1.229%	0.005	37%	0.158		
	Mar.-Apr.	76	35.40	13.542	6.372%	0.025	100% 0.515	50	14.21	3.504	3.257%	0.009	43%	0.157		
	May-June	57	22.12	11.572	3.070%	0.016	49% 0.207	74	13.48	2.985	2.624%	0.006	100%	0.300		
	July-Aug.	171	3.11	0.926	0.813%	0.002	67% 0.212	63	3.03	1.790	0.523%	0.003	72%	0.425		

Table 6 (cont.). Ratio estimators and standard errors (s.e.) for the discarded pounds of 29 selected species or species groups, by area, observer-program year, depth, and 2-month period. Standard errors cannot be calculated where there is only one tow in a category.

NOTE: RESULTS FOR CATEGORIES WITH FEWER THAN 10 TOWS SHOULD BE TREATED VERY CAUTIOUSLY.

Species	September 1, 2001 to August 31, 2002 (1st program year)										September 1, 2002 to August 31, 2003 (2nd program year)						
	Area	Depth group	Period	Number of tows	Discarded lbs per hour		Discarded lbs per lb of retained groundfish		Discard rate of each species		Number of tows	Discarded lbs per hour		Discarded lbs per lb of retained groundfish		Discard rate of each species	
					lb/hr	s.e.	ratio	s.e.	discard / catch	s.e.		lb/hr	s.e.	ratio	s.e.	discard / catch	s.e.
Widow Rockfish																	
North of 40°10' N. lat. (near Cape Mendocino)																	
0-75 fm		Sept.-Oct.	91	0.00		0.000%		0%		197	0.11	0.080	0.016%	0.000	100%	0.864	
		Nov.-Dec.	73	0.00		0.000%				62	0.19	0.121	0.034%	0.000	100%	0.814	
		Jan.-Feb.	8	0.00		0.000%				4	0.00		0.000%				
		Mar.-Apr.	144	0.03	0.028	0.009%	0.000	18%	0.063	179	0.01	0.011	0.002%	0.000	23%	0.100	
		May-June	470	0.09	0.087	0.020%	0.000	10%	0.078	67	0.00		0.000%				
		July-Aug.	408	0.00		0.000%		0%		37	0.00		0.000%				
75-150 fm		Sept.-Oct.	125	0.06	0.024	0.013%	0.000	14%	0.031	42	0.00		0.000%		0%		
		Nov.-Dec.	18	0.02	0.022	0.002%	0.000	0%	0.000	11	0.55	0.367	0.071%	0.000	100%	0.825	
		Jan.-Feb.	29	0.54	0.283	0.060%	0.000	100%	0.678	27	1.81	1.806	0.166%	0.002	100%	1.000	
		Mar.-Apr.	142	0.29	0.210	0.073%	0.001	34%	0.150	145	0.01	0.010	0.001%	0.000	38%	0.218	
		May-June	86	0.09	0.057	0.018%	0.000	13%	0.077	12	0.00		0.000%				
		July-Aug.	89	0.08	0.082	0.013%	0.000	44%	0.311								
≥150 fm		Sept.-Oct.	110	0.00		0.000%		0%		155	0.00		0.000%		0%		
		Nov.-Dec.	23	0.29	0.166	0.043%	0.000	100%	0.725	113	0.25	0.154	0.076%	0.000	100%	0.775	
		Jan.-Feb.	315	0.05	0.020	0.010%	0.000	100%	0.572	173	0.01	0.009	0.004%	0.000	100%	0.759	
		Mar.-Apr.	317	0.03	0.028	0.008%	0.000	78%	0.682	300	0.10	0.099	0.020%	0.000	39%	0.254	
		May-June	77	0.00		0.000%		0%		302	0.03	0.030	0.009%	0.000	100%	1.000	
		July-Aug.	20	0.00		0.000%		0%		195	0.01	0.008	0.002%	0.000	100%	1.000	
South of 40°10' N. lat. (near Cape Mendocino)																	
0-75 fm		Sept.-Oct.	42	0.00		0.000%		0%					0.000%				
		Nov.-Dec.	4	0.00		0.000%											
		Jan.-Feb.	40	0.00		0.000%				8	0.00		0.000%				
		Mar.-Apr.	29	0.00		0.000%				31	0.00		0.000%				
		May-June	3	0.00		0.000%				60	0.00		0.000%				
		July-Aug.								73	0.00		0.000%				
75-150 fm		Sept.-Oct.	60	0.00		0.000%		0%					0.000%				
		Nov.-Dec.	14	0.24	0.166	0.047%	0.000	86%	0.659	3	0.00		0.000%				
		Jan.-Feb.	18	0.00		0.000%		0%									
		Mar.-Apr.	8	1.24	1.245	0.230%	0.002	93%	0.924								
		May-June	13	0.01	0.008	0.002%	0.000	0%	0.005								
		July-Aug.	1	0.47		0.243%		100%									
≥150 fm		Sept.-Oct.	15	0.00		0.000%		0%		72	0.00		0.000%				
		Nov.-Dec.	9	0.00		0.000%		0%		69	0.00		0.000%				
		Jan.-Feb.	67	0.01	0.008	0.003%	0.000	100%	0.863	64	0.00		0.000%				
		Mar.-Apr.	76	0.24	0.128	0.043%	0.000	100%	0.689	50	0.00		0.000%				
		May-June	57	0.00		0.000%				74	0.00		0.000%				
		July-Aug.	171	0.02	0.009	0.004%	0.000	100%	0.779	63	0.00		0.000%				

Table 6 (cont.). Ratio estimators and standard errors (s.e.) for the discarded pounds of 29 selected species or species groups, by area, observer-program year, depth, and 2-month period. Standard errors cannot be calculated where there is only one tow in a category.
NOTE: RESULTS FOR CATEGORIES WITH FEWER THAN 10 TOWS SHOULD BE TREATED VERY CAUTIOUSLY.

Species	September 1, 2001 to August 31, 2002 (1st program year)										September 1, 2002 to August 31, 2003 (2nd program year)									
	Area Depth group Period	Number of tows	Discarded lbs per hour		Discarded lbs per lb of retained groundfish		Discard rate of each species		Number of tows	Discarded lbs per hour		Discarded lbs per lb of retained groundfish		Discard rate of each species						
			lb/hr	s.e.	ratio	s.e.	discard / catch	s.e.		lb/hr	s.e.	ratio	s.e.	discard / catch	s.e.					
Yelloweye Rockfish																				
North of 40°10' N. lat. (near Cape Mendocino)																				
0-75 fm		Sept.-Oct.	91	0.00		0.000%			197	0.05	0.030		0.007%	0.000	95%	0.675				
		Nov.-Dec.	73	0.00		0.000%			62	0.04	0.038		0.007%	0.000	100%	1.000				
		Jan.-Feb.	8	0.00		0.000%			4	0.00			0.000%							
		Mar.-Apr.	144	0.00		0.000%		0%	179	0.09	0.080		0.015%	0.000	72%	0.581				
		May-June	470	0.01	0.005	0.002%	0.000	49%	67	0.00			0.000%							
		July-Aug.	408	0.00		0.000%		0%	37	0.00			0.000%		0%					
75-150 fm		Sept.-Oct.	125	0.00		0.000%			42	0.00			0.000%		0%					
		Nov.-Dec.	18	0.00		0.000%			11	0.00			0.000%							
		Jan.-Feb.	29	2.20	2.113	0.244%	0.002	100%	27	0.00			0.000%							
		Mar.-Apr.	142	0.00		0.000%		0%	145	0.01	0.009		0.001%	0.000	39%	0.273				
		May-June	86	0.00	0.003	0.001%	0.000	8%	12	0.00			0.000%							
		July-Aug.	89	0.00		0.000%		0%												
>=150 fm		Sept.-Oct.	110	0.00		0.000%			155	0.00			0.000%							
		Nov.-Dec.	23	0.00		0.000%			113	0.00			0.000%							
		Jan.-Feb.	315	0.00	0.003	0.001%	0.000	100%	173	0.00			0.000%							
		Mar.-Apr.	317	0.00		0.000%			300	0.00	0.002		0.000%	0.000	100%	1.000				
		May-June	77	0.00		0.000%			302	0.00			0.000%							
		July-Aug.	20	0.00		0.000%			195	0.00			0.000%							
South of 40°10' N. lat. (near Cape Mendocino)																				
0-75 fm		Sept.-Oct.	42	0.00		0.000%														
		Nov.-Dec.	4	0.00		0.000%														
		Jan.-Feb.	40	0.00		0.000%			8	0.00			0.000%							
		Mar.-Apr.	29	0.00		0.000%			31	0.00			0.000%							
		May-June	3	0.00		0.000%			60	0.00			0.000%							
		July-Aug.							73	0.19	0.152		0.085%	0.001	100%	0.931				
75-150 fm		Sept.-Oct.	60	0.00		0.000%														
		Nov.-Dec.	14	0.00		0.000%			3	0.00			0.000%							
		Jan.-Feb.	18	0.00		0.000%														
		Mar.-Apr.	8	0.00		0.000%														
		May-June	13	0.00		0.000%														
		July-Aug.	1	0.00		0.000%														
>=150 fm		Sept.-Oct.	15	0.00		0.000%			72	0.00			0.000%							
		Nov.-Dec.	9	0.00		0.000%			69	0.00			0.000%							
		Jan.-Feb.	67	0.00		0.000%			64	0.00			0.000%							
		Mar.-Apr.	76	0.06	0.057	0.010%	0.000	100%	50	0.00			0.000%							
		May-June	57	0.00		0.000%			74	0.00			0.000%							
		July-Aug.	171	0.00		0.000%			63	0.00			0.000%							

Table 6 (cont.). Ratio estimators and standard errors (s.e.) for the discarded pounds of 29 selected species or species groups, by area, observer-program year, depth, and 2-month period. Standard errors cannot be calculated where there is only one tow in a category.

NOTE: RESULTS FOR CATEGORIES WITH FEWER THAN 10 TOWS SHOULD BE TREATED VERY CAUTIOUSLY.

Species	September 1, 2001 to August 31, 2002 (1st program year)										September 1, 2002 to August 31, 2003 (2nd program year)							
	Area Depth group Period	Number of tows	Discarded lbs per hour		Discarded lbs per lb of retained groundfish		Discard rate of each species		Number of tows	Discarded lbs per hour		Discarded lbs per lb of retained groundfish		Discard rate of each species				
			lb/hr	s.e.	ratio	s.e.	discard / catch	s.e.		lb/hr	s.e.	ratio	s.e.	discard / catch	s.e.			
Yellowtail Rockfish																		
North of 40°10' N. lat. (near Cape Mendocino)																		
0-75 fm		Sept.-Oct.	91	0.11	0.096	0.042%	0.000	5%	0.020	197	0.60	0.535	0.083%	0.001	5%	0.028		
		Nov.-Dec.	73	1.01	0.916	0.443%	0.004	32%	0.151	62	0.01	0.014	0.003%	0.000	1%	0.002		
		Jan.-Feb.	8	30.31	24.348	16.493%	0.134	98%	0.900	4	0.30	0.194	0.043%	0.000	1%	0.008		
		Mar.-Apr.	144	0.00		0.000%		0%		179	0.02	0.013	0.003%	0.000	0%	0.001		
		May-June	470	4.63	3.160	0.980%	0.007	15%	0.047	67	0.00		0.000%		0%			
		July-Aug.	408	0.09	0.041	0.020%	0.000	3%	0.010	37	0.00		0.000%		0%			
75-150 fm		Sept.-Oct.	125	0.78	0.494	0.172%	0.001	7%	0.046	42	0.00		0.000%		0%			
		Nov.-Dec.	18	170.67	134.688	18.700%	0.160	30%	0.269	11	0.00		0.000%		0%			
		Jan.-Feb.	29	76.93	35.775	8.516%	0.055	100%	0.613	27	0.02	0.020	0.002%	0.000	0%	0.000		
		Mar.-Apr.	142	3.49	1.644	0.863%	0.004	35%	0.135	145	0.14	0.073	0.020%	0.000	0%	0.002		
		May-June	86	4.36	4.257	0.907%	0.009	14%	0.095	12	0.10	0.100	0.013%	0.000	2%	0.013		
		July-Aug.	89	0.01	0.011	0.002%	0.000	0%	0.000									
>=150 fm		Sept.-Oct.	110	0.00		0.000%				155	0.00		0.000%		0%			
		Nov.-Dec.	23	0.00		0.000%				113	0.00		0.000%		0%			
		Jan.-Feb.	315	0.01	0.005	0.002%	0.000	100%	0.720	173	0.00		0.000%		0%			
		Mar.-Apr.	317	0.00	0.003	0.001%	0.000	46%	0.321	300	0.02	0.019	0.004%	0.000	100%	0.997		
		May-June	77	0.00		0.000%		0%		302	0.04	0.044	0.013%	0.000	100%	1.000		
		July-Aug.	20	0.00		0.000%		0%		195	0.08	0.059	0.018%	0.000	100%	0.917		
South of 40°10' N. lat. (near Cape Mendocino)																		
0-75 fm		Sept.-Oct.	42	0.00		0.000%												
		Nov.-Dec.	4	0.00		0.000%												
		Jan.-Feb.	40	0.02	0.021	0.003%	0.000	5%	0.027	8	0.00		0.000%					
		Mar.-Apr.	29	0.00		0.000%				31	0.08	0.049	0.024%	0.000	100%	0.797		
		May-June	3	0.00		0.000%				60	0.00		0.000%					
		July-Aug.								73	0.00		0.000%					
75-150 fm		Sept.-Oct.	60	0.00		0.000%												
		Nov.-Dec.	14	0.00		0.000%				3	0.00		0.000%					
		Jan.-Feb.	18	0.00		0.000%												
		Mar.-Apr.	8	0.00		0.000%												
		May-June	13	0.00		0.000%												
		July-Aug.	1	0.00		0.000%												
>=150 fm		Sept.-Oct.	15	0.00		0.000%				72	0.00		0.000%					
		Nov.-Dec.	9	0.00		0.000%				69	0.00		0.000%					
		Jan.-Feb.	67	0.00		0.000%		0%		64	0.00		0.000%					
		Mar.-Apr.	76	0.00		0.000%				50	0.00		0.000%					
		May-June	57	0.00		0.000%				74	0.00		0.000%					
		July-Aug.	171	0.00		0.000%				63	0.00		0.000%					

Table 7. Ratio estimators and standard errors (s.e.) for the total bycatch of eight overfished species per pound of total retained groundfish, by area, observer-program year, depth, and 2-month period. Standard errors cannot be calculated where there is only one tow in a category.

Area / Depth group	2001				2002								Entire first year	
	Sept.-Oct.		Nov.-Dec.		Jan.-Feb.		March-April		May-June		July-August			
	Species catch per lb of retained groundfish		Species catch per lb of retained groundfish		Species catch per lb of retained groundfish		Species catch per lb of retained groundfish		Species catch per lb of retained groundfish		Species catch per lb of retained groundfish		Species catch per lb of retained groundfish	
	percent	s.e	percent	s.e	percent	s.e	percent	s.e	percent	s.e	percent	s.e	percent	s.e
A. Bocaccio														
Data collected from September 1, 2001 to August 31, 2002														
North of 40°10' N. lat. (near Cape Mendocino)														
< 75 fm	0.000%	0.0000	0.000%	0.0000	0.000%	0.0000	0.095%	0.0008	0.000%	0.0000	0.005%	0.0000	0.012%	0.0001
75 - 150 fm	0.182%	0.0018	0.000%	0.0000	0.151%	0.0011	0.031%	0.0001	0.008%	0.0001	0.028%	0.0002	0.076%	0.0005
>150 fm	0.000%	0.0000	0.000%	0.0000	0.020%	0.0001	0.000%	0.0000	0.000%	0.0000	0.000%	0.0000	0.008%	0.0000
South of 40°10' N. lat. (near Cape Mendocino)														
< 75 fm	0.464%	0.0034	3.124%	0.0312	0.284%	0.0010	1.041%	0.0063	2.018%	0.0202			0.686%	0.0028
75 - 150 fm	2.000%	0.0069	17.450%	0.0825	9.757%	0.0498	7.786%	0.0506	12.987%	0.0482	0.000%	0.0000	6.899%	0.0155
>150 fm	0.007%	0.0001	5.525%	0.0218	0.185%	0.0012	0.093%	0.0004	0.000%	0.0000	0.033%	0.0003	0.134%	0.0004
Coastwide														
< 75 fm	0.150%	0.0011	0.607%	0.0061	0.274%	0.0010	0.350%	0.0018	0.002%	0.0000	0.005%	0.0000	0.112%	0.0004
75 - 150 fm	0.722%	0.0024	6.012%	0.0337	4.075%	0.0233	0.555%	0.0036	1.674%	0.0073	0.028%	0.0002	1.397%	0.0032
>150 fm	0.001%	0.0000	1.255%	0.0058	0.043%	0.0002	0.020%	0.0001	0.000%	0.0000	0.030%	0.0003	0.051%	0.0002

Table 7 (cont.). Ratio estimators and standard errors (s.e.) for the total bycatch of eight overfished species per pound of total retained groundfish, by area, observer-program year, depth, and 2-month period. Standard errors cannot be calculated where there is only one tow in a category.

Area / Depth group	2001				2002								Entire first year	
	Sept.-Oct.		Nov.-Dec.		Jan.-Feb.		March-April		May-June		July-August			
	Species catch per lb of retained groundfish		Species catch per lb of retained groundfish		Species catch per lb of retained groundfish		Species catch per lb of retained groundfish		Species catch per lb of retained groundfish		Species catch per lb of retained groundfish			
	percent	s.e	percent	s.e	percent	s.e	percent	s.e	percent	s.e	percent	s.e	percent	s.e
B. Canary Rockfish														
Data collected from September 1, 2001 to August 31, 2002														
North of 40°10' N. lat. (near Cape Mendocino)														
< 75 fm	0.446%	0.0018	0.773%	0.0022	1.332%	0.0090	0.822%	0.0022	0.480%	0.0014	0.667%	0.0020	0.601%	0.0010
75 - 150 fm	0.635%	0.0014	0.743%	0.0046	2.720%	0.0152	1.375%	0.0023	0.795%	0.0019	0.728%	0.0019	1.005%	0.0011
>150 fm	0.003%	0.0000	0.000%	0.0000	0.007%	0.0000	0.018%	0.0001	0.000%	0.0000	0.138%	0.0006	0.013%	0.0001
South of 40°10' N. lat. (near Cape Mendocino)														
< 75 fm	0.347%	0.0026	0.000%	0.0312	0.049%	0.0005	0.051%	0.0005	0.079%	0.0008			0.101%	0.0006
75 - 150 fm	0.142%	0.0007	0.000%	0.0825	0.193%	0.0011	0.758%	0.0076	0.892%	0.0046	2.189%	0.0000	0.267%	0.0009
>150 fm	0.000%	0.0001	0.000%	0.0218	0.000%	0.0012	0.023%	0.0002	0.001%	0.0000	0.006%	0.0001	0.007%	0.0001
Coastwide														
< 75 fm	0.414%	0.0015	0.623%	0.0019	0.092%	0.0006	0.614%	0.0016	0.480%	0.0014	0.667%	0.0020	0.527%	0.0009
75 - 150 fm	0.489%	0.0010	0.487%	0.0024	1.688%	0.0068	1.334%	0.0022	0.807%	0.0018	0.735%	0.0019	0.863%	0.0009
>150 fm	0.002%	0.0000	0.000%	0.0058	0.006%	0.0000	0.019%	0.0001	0.000%	0.0000	0.017%	0.0001	0.011%	0.0000
Data collected from September 1, 2002 to August 31, 2003														
North of 40°10' N. lat. (near Cape Mendocino)														
< 75 fm	0.454%	0.0021	0.588%	0.0015	2.187%	0.0219	0.291%	0.0006	0.019%	0.0001	0.106%	0.0004	0.369%	0.0009
75 - 150 fm	0.796%	0.0022	3.323%	0.0249	1.014%	0.0016	1.314%	0.0025	1.815%	0.0154			1.349%	0.0024
>150 fm	0.000%	0.0000	0.000%	0.0010	0.017%	0.0001	0.004%	0.0000	0.005%	0.0000	0.010%	0.0001	0.006%	0.0000
South of 40°10' N. lat. (near Cape Mendocino)														
< 75 fm					0.000%	0.0000	0.005%	0.0001	0.000%	0.0002	0.000%	0.0002	0.001%	0.0000
75 - 150 fm			0.021%	0.0002									0.021%	0.0002
>150 fm	0.000%	0.0009	0.000%	0.0057	0.000%	0.0006	0.000%	0.0000	0.000%	0.0000	0.000%	0.0000	0.000%	0.0008
Coastwide														
< 75 fm	0.454%	0.0021	0.588%	0.0015	1.983%	0.0198	0.259%	0.0006	0.010%	0.0001	0.061%	0.0002	0.317%	0.0008
75 - 150 fm	0.796%	0.0022	3.065%	0.0231	1.014%	0.0016	1.314%	0.0025	1.815%	0.0154			1.341%	0.0024
>150 fm	0.000%	0.0004	0.000%	0.0022	0.011%	0.0000	0.003%	0.0000	0.003%	0.0000	0.007%	0.0000	0.004%	0.0000

Table 7 (cont.). Ratio estimators and standard errors (s.e.) for the total bycatch of eight overfished species per pound of total retained groundfish, by area, observer-program year, depth, and 2-month period. Standard errors cannot be calculated where there is only one tow in a category.

Area / Depth group	2001				2002								Entire first year	
	Sept.-Oct.		Nov.-Dec.		Jan.-Feb.		March-April		May-June		July-August			
	Species catch per lb of retained groundfish		Species catch per lb of retained groundfish		Species catch per lb of retained groundfish		Species catch per lb of retained groundfish		Species catch per lb of retained groundfish		Species catch per lb of retained groundfish			
	percent	s.e	percent	s.e	percent	s.e	percent	s.e	percent	s.e	percent	s.e	percent	s.e
C. Cowcod Rockfish														
Data collected from September 1, 2001 to August 31, 2002														
North of 40°10' N. lat. (near Cape Mendocino)														
< 75 fm	0.000%	0.0018	0.000%	0.0022	0.000%	0.0090	0.000%	0.0022	0.000%	0.0014	0.000%	0.0020	0.000%	0.0010
75 - 150 fm	0.002%	0.0000	0.000%	0.0046	0.000%	0.0152	0.000%	0.0023	0.000%	0.0019	0.000%	0.0019	0.001%	0.0000
>150 fm	0.000%	0.0000	0.000%	0.0000	0.000%	0.0000	0.000%	0.0001	0.000%	0.0000	0.000%	0.0006	0.000%	0.0001
South of 40°10' N. lat. (near Cape Mendocino)														
< 75 fm	0.000%	0.0026	0.000%	0.0312	0.000%	0.0005	0.041%	0.0003	0.000%	0.0008			0.009%	0.0001
75 - 150 fm	0.009%	0.0000	0.596%	0.0032	0.457%	0.0042	1.960%	0.0189	0.963%	0.0043	0.000%	0.0000	0.408%	0.0017
>150 fm	0.002%	0.0000	0.247%	0.0025	0.012%	0.0001	0.023%	0.0002	0.002%	0.0000	0.000%	0.0001	0.010%	0.0001
Coastwide														
< 75 fm	0.000%	0.0015	0.000%	0.0019	0.000%	0.0006	0.011%	0.0001	0.000%	0.0014	0.000%	0.0020	0.001%	0.0000
75 - 150 fm	0.004%	0.0000	0.206%	0.0013	0.187%	0.0017	0.132%	0.0013	0.124%	0.0006	0.000%	0.0019	0.079%	0.0003
>150 fm	0.000%	0.0000	0.056%	0.0006	0.002%	0.0000	0.005%	0.0000	0.002%	0.0000	0.000%	0.0001	0.004%	0.0000
Data collected from September 1, 2002 to August 31, 2003														
North of 40°10' N. lat. (near Cape Mendocino)														
< 75 fm	0.000%	0.0021	0.000%	0.0015	0.000%	0.0219	0.000%	0.0006	0.000%	0.0001	0.000%	0.0004	0.000%	0.0009
75 - 150 fm	0.000%	0.0022	0.000%	0.0249	0.000%	0.0016	0.000%	0.0025	0.000%	0.0154			0.000%	0.0024
>150 fm	0.000%	0.0000	0.000%	0.0010	0.000%	0.0001	0.000%	0.0000	0.000%	0.0000	0.000%	0.0001	0.000%	0.0000
South of 40°10' N. lat. (near Cape Mendocino)														
< 75 fm					0.000%	0.0000	0.064%	0.0005	0.004%	0.0000	0.001%	0.0000	0.019%	0.0001
75 - 150 fm			2.918%	0.0292									2.918%	0.0292
>150 fm	0.000%	0.0009	0.000%	0.0057	0.000%	0.0006	0.000%	0.0000	0.000%	0.0000	0.000%	0.0000	0.000%	0.0008
Coastwide														
< 75 fm	0.000%	0.0021	0.000%	0.0015	0.000%	0.0198	0.007%	0.0001	0.002%	0.0000	0.001%	0.0000	0.003%	0.0000
75 - 150 fm	0.000%	0.0022	0.228%	0.0023	0.000%	0.0016	0.000%	0.0025	0.000%	0.0154			0.018%	0.0002
>150 fm	0.000%	0.0004	0.000%	0.0022	0.000%	0.0000	0.000%	0.0000	0.000%	0.0000	0.000%	0.0000	0.000%	0.0000

Table 7 (cont.). Ratio estimators and standard errors (s.e.) for the total bycatch of eight overfished species per pound of total retained groundfish, by area, observer-program year, depth, and 2-month period. Standard errors cannot be calculated where there is only one tow in a category.

Area / Depth group	2001				2002								Entire first year	
	Sept.-Oct.		Nov.-Dec.		Jan.-Feb.		March-April		May-June		July-August			
	Species catch per lb of retained groundfish		Species catch per lb of retained groundfish		Species catch per lb of retained groundfish		Species catch per lb of retained groundfish		Species catch per lb of retained groundfish		Species catch per lb of retained groundfish		Species catch per lb of retained groundfish	
	percent	s.e	percent	s.e	percent	s.e	percent	s.e	percent	s.e	percent	s.e	percent	s.e
D. Widow Rockfish														
Data collected from September 1, 2001 to August 31, 2002														
North of 40°10' N. lat. (near Cape Mendocino)														
< 75 fm	0.005%	0.0000	0.000%	0.0022	0.000%	0.0090	0.047%	0.0001	0.198%	0.0016	0.002%	0.0000	0.085%	0.0006
75 - 150 fm	0.090%	0.0002	41.984%	0.3719	0.060%	0.0004	0.213%	0.0008	0.139%	0.0008	0.030%	0.0002	2.340%	0.0187
>150 fm	0.012%	0.0001	0.043%	0.0002	0.010%	0.0000	0.010%	0.0001	0.002%	0.0000	0.007%	0.0001	0.011%	0.0000
South of 40°10' N. lat. (near Cape Mendocino)														
< 75 fm	0.000%	0.0026	0.012%	0.0001	0.000%	0.0005	0.000%	0.0003	0.000%	0.0008			0.001%	0.0000
75 - 150 fm	0.001%	0.0000	0.054%	0.0003	0.336%	0.0026	0.246%	0.0023	0.453%	0.0045	0.243%	0.0000	0.139%	0.0007
>150 fm	0.004%	0.0000	0.104%	0.0007	0.003%	0.0000	0.043%	0.0002	0.000%	0.0000	0.004%	0.0000	0.013%	0.0001
Coastwide														
< 75 fm	0.004%	0.0000	0.002%	0.0000	0.000%	0.0006	0.034%	0.0001	0.198%	0.0016	0.002%	0.0000	0.072%	0.0005
75 - 150 fm	0.064%	0.0001	27.537%	0.2363	0.173%	0.0011	0.215%	0.0008	0.179%	0.0009	0.031%	0.0002	1.914%	0.0151
>150 fm	0.011%	0.0001	0.057%	0.0002	0.009%	0.0000	0.017%	0.0001	0.001%	0.0000	0.004%	0.0000	0.011%	0.0000
Data collected from September 1, 2002 to August 31, 2003														
North of 40°10' N. lat. (near Cape Mendocino)														
< 75 fm	0.016%	0.0001	0.034%	0.0002	0.000%	0.0219	0.008%	0.0000	0.000%	0.0001	0.000%	0.0004	0.012%	0.0001
75 - 150 fm	0.043%	0.0002	0.071%	0.0005	0.166%	0.0017	0.004%	0.0000	0.000%	0.0154			0.043%	0.0003
>150 fm	0.004%	0.0000	0.076%	0.0005	0.004%	0.0000	0.052%	0.0003	0.009%	0.0001	0.002%	0.0000	0.025%	0.0001
South of 40°10' N. lat. (near Cape Mendocino)														
< 75 fm					0.000%	0.0000	0.000%	0.0005	0.000%	0.0000	0.000%	0.0000	0.000%	0.0001
75 - 150 fm			0.000%	0.0292									0.000%	0.0292
>150 fm	0.000%	0.0009	0.000%	0.0057	0.000%	0.0006	0.000%	0.0000	0.000%	0.0000	0.000%	0.0000	0.000%	0.0008
Coastwide														
< 75 fm	0.016%	0.0001	0.034%	0.0002	0.000%	0.0198	0.007%	0.0000	0.000%	0.0000	0.000%	0.0000	0.011%	0.0000
75 - 150 fm	0.043%	0.0002	0.066%	0.0005	0.166%	0.0017	0.004%	0.0000	0.000%	0.0154			0.043%	0.0003
>150 fm	0.002%	0.0000	0.048%	0.0003	0.002%	0.0000	0.046%	0.0003	0.006%	0.0001	0.001%	0.0000	0.018%	0.0001

Table 7 (cont.). Ratio estimators and standard errors (s.e.) for the total bycatch of eight overfished species per pound of total retained groundfish, by area, observer-program year, depth, and 2-month period. Standard errors cannot be calculated where there is only one tow in a category.

Area / Depth group	2001				2002								Entire first year	
	Sept.-Oct.		Nov.-Dec.		Jan.-Feb.		March-April		May-June		July-August			
	Species catch per lb of retained groundfish		Species catch per lb of retained groundfish		Species catch per lb of retained groundfish		Species catch per lb of retained groundfish		Species catch per lb of retained groundfish		Species catch per lb of retained groundfish			
	percent	s.e	percent	s.e	percent	s.e	percent	s.e	percent	s.e	percent	s.e	percent	s.e
E. Yelloweye Rockfish														
Data collected from September 1, 2001 to August 31, 2002														
North of 40°10' N. lat. (near Cape Mendocino)														
< 75 fm	0.000%	0.0000	0.000%	0.0022	0.000%	0.0090	0.001%	0.0000	0.004%	0.0000	0.004%	0.0000	0.003%	0.0000
75 - 150 fm	0.000%	0.0002	0.000%	0.3719	0.244%	0.0024	0.007%	0.0000	0.009%	0.0000	0.007%	0.0000	0.021%	0.0002
>150 fm	0.000%	0.0001	0.000%	0.0002	0.001%	0.0000	0.000%	0.0001	0.000%	0.0000	0.000%	0.0001	0.000%	0.0000
South of 40°10' N. lat. (near Cape Mendocino)														
< 75 fm	0.000%	0.0026	0.000%	0.0001	0.000%	0.0005	0.000%	0.0003	0.000%	0.0008			0.000%	0.0000
75 - 150 fm	0.000%	0.0000	0.000%	0.0003	0.000%	0.0026	0.000%	0.0023	0.000%	0.0045	0.000%	0.0000	0.000%	0.0007
>150 fm	0.000%	0.0000	0.000%	0.0007	0.000%	0.0000	0.010%	0.0001	0.000%	0.0000	0.000%	0.0000	0.002%	0.0000
Coastwide														
< 75 fm	0.000%	0.0000	0.000%	0.0000	0.000%	0.0006	0.000%	0.0000	0.004%	0.0000	0.004%	0.0000	0.003%	0.0000
75 - 150 fm	0.000%	0.0001	0.000%	0.2363	0.144%	0.0014	0.006%	0.0000	0.008%	0.0000	0.007%	0.0000	0.017%	0.0001
>150 fm	0.000%	0.0001	0.000%	0.0002	0.001%	0.0000	0.002%	0.0000	0.000%	0.0000	0.000%	0.0000	0.001%	0.0000
Data collected from September 1, 2002 to August 31, 2003														
North of 40°10' N. lat. (near Cape Mendocino)														
< 75 fm	0.008%	0.0000	0.007%	0.0001	0.000%	0.0219	0.021%	0.0001	0.000%	0.0001	0.014%	0.0000	0.012%	0.0001
75 - 150 fm	0.010%	0.0000	0.000%	0.0005	0.000%	0.0017	0.003%	0.0000	0.000%	0.0154			0.003%	0.0000
>150 fm	0.000%	0.0000	0.000%	0.0005	0.000%	0.0000	0.000%	0.0000	0.000%	0.0001	0.000%	0.0000	0.000%	0.0000
South of 40°10' N. lat. (near Cape Mendocino)														
< 75 fm					0.000%	0.0000	0.000%	0.0005	0.000%	0.0000	0.085%	0.0007	0.025%	0.0002
75 - 150 fm			0.000%	0.0292									0.000%	0.0292
>150 fm	0.000%	0.0009	0.000%	0.0057	0.000%	0.0006	0.000%	0.0000	0.000%	0.0000	0.000%	0.0000	0.000%	0.0008
Coastwide														
< 75 fm	0.008%	0.0000	0.007%	0.0001	0.000%	0.0198	0.019%	0.0001	0.000%	0.0000	0.045%	0.0003	0.014%	0.0001
75 - 150 fm	0.010%	0.0000	0.000%	0.0005	0.000%	0.0017	0.003%	0.0000	0.000%	0.0154			0.003%	0.0000
>150 fm	0.000%	0.0000	0.000%	0.0003	0.000%	0.0000	0.000%	0.0000	0.000%	0.0001	0.000%	0.0000	0.000%	0.0000

Table 7 (cont.). Ratio estimators and standard errors (s.e.) for the total bycatch of eight overfished species per pound of total retained groundfish, by area, observer-program year, depth, and 2-month period. Standard errors cannot be calculated where there is only one tow in a category.

Area / Depth group		2001				2002								Entire first year			
		Sept.-Oct.		Nov.-Dec.		Jan.-Feb.		March-April		May-June		July-August					
		Species catch per lb of retained groundfish		Species catch per lb of retained groundfish		Species catch per lb of retained groundfish		Species catch per lb of retained groundfish		Species catch per lb of retained groundfish		Species catch per lb of retained groundfish					
		percent	s.e	percent	s.e	percent	s.e	percent	s.e	percent	s.e	percent	s.e	percent	s.e		
F. Darkblotched Rockfish																	
Data collected from September 1, 2001 to August 31, 2002																	
North of 40°10' N. lat. (near Cape Mendocino)																	
< 75 fm		0.431%	0.0035	0.000%	0.0022	0.000%	0.0090	0.092%	0.0003	0.233%	0.0007	0.056%	0.0002	0.153%	0.0004		
75 - 150 fm		1.802%	0.0051	0.000%	0.3719	1.835%	0.0156	2.584%	0.0113	4.200%	0.0119	1.576%	0.0100	2.273%	0.0043		
>150 fm		3.494%	0.0105	0.596%	0.0019	0.844%	0.0014	0.501%	0.0010	1.509%	0.0037	0.198%	0.0011	0.952%	0.0012		
South of 40°10' N. lat. (near Cape Mendocino)																	
< 75 fm		0.000%	0.0026	0.000%	0.0001	0.000%	0.0005	0.000%	0.0003	0.000%	0.0008			0.000%	0.0000		
75 - 150 fm		0.044%	0.0003	0.065%	0.0005	0.346%	0.0024	0.048%	0.0003	0.193%	0.0014	0.000%	0.0000	0.122%	0.0005		
>150 fm		0.023%	0.0002	0.000%	0.0007	0.118%	0.0004	0.030%	0.0002	0.052%	0.0003	0.309%	0.0013	0.154%	0.0005		
Coastwide																	
< 75 fm		0.292%	0.0023	0.000%	0.0000	0.000%	0.0006	0.067%	0.0002	0.233%	0.0007	0.056%	0.0002	0.130%	0.0003		
75 - 150 fm		1.280%	0.0036	0.023%	0.0002	1.227%	0.0091	2.413%	0.0106	3.685%	0.0103	1.568%	0.0100	1.857%	0.0035		
>150 fm		2.917%	0.0088	0.460%	0.0015	0.742%	0.0012	0.403%	0.0008	0.575%	0.0014	0.299%	0.0012	0.678%	0.0008		
		2002				2003								Entire second year			
		Sept.-Oct.		Nov.-Dec.		Jan.-Feb.		March-April		May-June		July-August					
Data collected from September 1, 2002 to August 31, 2003																	
North of 40°10' N. lat. (near Cape Mendocino)																	
< 75 fm		0.056%	0.0003	0.025%	0.0001	0.003%	0.0000	0.057%	0.0002	0.255%	0.0014	0.359%	0.0026	0.088%	0.0002		
75 - 150 fm		0.494%	0.0013	0.753%	0.0047	0.393%	0.0013	0.705%	0.0018	2.591%	0.0154			0.696%	0.0013		
>150 fm		0.001%	0.0000	3.168%	0.0101	1.695%	0.0061	0.123%	0.0003	0.736%	0.0017	1.138%	0.0029	0.876%	0.0013		
South of 40°10' N. lat. (near Cape Mendocino)																	
< 75 fm						0.000%	0.0000	0.004%	0.0000	0.000%	0.0000	0.000%	0.0007	0.001%	0.0000		
75 - 150 fm				0.000%	0.0292									0.000%	0.0292		
>150 fm		0.008%	0.0000	0.330%	0.0026	0.011%	0.0001	0.001%	0.0000	0.004%	0.0000	0.510%	0.0028	0.123%	0.0005		
Coastwide																	
< 75 fm		0.056%	0.0003	0.025%	0.0001	0.003%	0.0000	0.051%	0.0002	0.135%	0.0007	0.206%	0.0015	0.076%	0.0002		
75 - 150 fm		0.494%	0.0013	0.694%	0.0044	0.393%	0.0013	0.705%	0.0018	2.591%	0.0154			0.691%	0.0013		
>150 fm		0.004%	0.0000	2.120%	0.0064	1.101%	0.0039	0.107%	0.0002	0.538%	0.0012	0.986%	0.0023	0.671%	0.0010		

Table 7 (cont.). Ratio estimators and standard errors (s.e.) for the total bycatch of eight overfished species per pound of total retained groundfish, by area, observer-program year, depth, and 2-month period. Standard errors cannot be calculated where there is only one tow in a category.

Area / Depth group	2001				2002									
	Sept.-Oct.		Nov.-Dec.		Jan.-Feb.		March-April		May-June		July-August			
	Species catch per lb of retained groundfish		Species catch per lb of retained groundfish		Species catch per lb of retained groundfish		Species catch per lb of retained groundfish		Species catch per lb of retained groundfish		Species catch per lb of retained groundfish		Species catch per lb of retained groundfish	
	percent	s.e	percent	s.e	percent	s.e	percent	s.e	percent	s.e	percent	s.e	percent	s.e
G. Pacific Ocean Perch														
Data collected from September 1, 2001 to August 31, 2002														
North of 40°10' N. lat. (near Cape Mendocino)														
< 75 fm	0.000%	0.0035	0.000%	0.0022	0.000%	0.0090	0.000%	0.0003	0.058%	0.0003	0.115%	0.0010	0.066%	0.0004
75 - 150 fm	1.717%	0.0091	0.020%	0.0002	4.212%	0.0340	3.301%	0.0160	11.989%	0.0515	2.221%	0.0116	4.050%	0.0106
>150 fm	1.473%	0.0051	0.323%	0.0010	1.577%	0.0041	0.643%	0.0025	1.127%	0.0067	0.172%	0.0017	1.086%	0.0020
South of 40°10' N. lat. (near Cape Mendocino)														
< 75 fm	0.000%	0.0026	0.000%	0.0001	0.000%	0.0005	0.000%	0.0003	0.000%	0.0008			0.000%	0.0000
75 - 150 fm	0.000%	0.0003	0.000%	0.0005	0.000%	0.0024	0.000%	0.0003	0.000%	0.0014	0.000%	0.0000	0.000%	0.0005
>150 fm	0.000%	0.0002	0.000%	0.0007	0.000%	0.0004	0.000%	0.0002	0.000%	0.0003	0.000%	0.0000	0.000%	0.0000
Coastwide														
< 75 fm	0.000%	0.0023	0.000%	0.0000	0.000%	0.0006	0.000%	0.0002	0.058%	0.0003	0.115%	0.0010	0.056%	0.0003
75 - 150 fm	1.207%	0.0064	0.013%	0.0001	2.491%	0.0189	3.078%	0.0149	10.450%	0.0447	2.210%	0.0116	3.266%	0.0085
>150 fm	1.228%	0.0043	0.250%	0.0008	1.356%	0.0035	0.510%	0.0020	0.405%	0.0024	0.015%	0.0001	0.713%	0.0013
2002														
2003														
Data collected from September 1, 2002 to August 31, 2003														
North of 40°10' N. lat. (near Cape Mendocino)														
< 75 fm	0.000%	0.0003	0.003%	0.0000	0.025%	0.0003	0.001%	0.0000	0.000%	0.0014	0.000%	0.0026	0.001%	0.0000
75 - 150 fm	0.017%	0.0002	0.105%	0.0005	0.574%	0.0046	0.011%	0.0001	0.000%	0.0154			0.119%	0.0008
>150 fm	0.000%	0.0000	3.954%	0.0095	0.526%	0.0012	0.316%	0.0013	1.018%	0.0025	2.176%	0.0070	1.095%	0.0016
South of 40°10' N. lat. (near Cape Mendocino)														
< 75 fm					0.000%	0.0000	0.000%	0.0000	0.000%	0.0000	0.000%	0.0007	0.000%	0.0000
75 - 150 fm			0.000%	0.0292									0.000%	0.0292
>150 fm	0.000%	0.0000	0.000%	0.0026	0.000%	0.0001	0.000%	0.0000	0.000%	0.0000	0.000%	0.0028	0.000%	0.0005
Coastwide														
< 75 fm	0.000%	0.0003	0.003%	0.0000	0.023%	0.0002	0.000%	0.0000	0.000%	0.0007	0.000%	0.0015	0.001%	0.0000
75 - 150 fm	0.017%	0.0002	0.097%	0.0005	0.574%	0.0046	0.011%	0.0001	0.000%	0.0154			0.118%	0.0008
>150 fm	0.000%	0.0000	2.494%	0.0059	0.341%	0.0008	0.276%	0.0011	0.742%	0.0018	1.648%	0.0053	0.797%	0.0012

Table 7 (cont.). Ratio estimators and standard errors (s.e.) for the total bycatch of eight overfished species per pound of total retained groundfish, by area, observer-program year, depth, and 2-month period. Standard errors cannot be calculated where there is only one tow in a category.

Area / Depth group	2001						2002							
	Sept.-Oct.		Nov.-Dec.		Jan.-Feb.		March-April		May-June		July-August		Entire first year	
	Species catch per lb of retained groundfish		Species catch per lb of retained groundfish		Species catch per lb of retained groundfish		Species catch per lb of retained groundfish		Species catch per lb of retained groundfish		Species catch per lb of retained groundfish		Species catch per lb of retained groundfish	
	percent	s.e	percent	s.e	percent	s.e	percent	s.e	percent	s.e	percent	s.e	percent	s.e
H. Lingcod														
Data collected from September 1, 2001 to August 31, 2002														
North of 40°10' N. lat. (near Cape Mendocino)														
< 75 fm	3.083%	0.0076	4.216%	0.0089	3.185%	0.0138	2.402%	0.0068	3.759%	0.0069	4.262%	0.0041	3.783%	0.0033
75 - 150 fm	4.020%	0.0052	3.844%	0.0309	3.581%	0.0203	5.266%	0.0098	3.675%	0.0077	8.619%	0.0183	5.037%	0.0053
>150 fm	0.164%	0.0007	0.201%	0.0007	0.171%	0.0004	0.091%	0.0004	0.076%	0.0004	1.069%	0.0103	0.149%	0.0003
South of 40°10' N. lat. (near Cape Mendocino)														
< 75 fm	2.085%	0.0062	0.967%	0.0075	0.978%	0.0059	1.915%	0.0063	11.328%	0.1133			1.405%	0.0038
75 - 150 fm	3.979%	0.0114	16.731%	0.0847	3.216%	0.0103	17.918%	0.1249	3.670%	0.0085	1.181%	0.0000	6.285%	0.0146
>150 fm	0.967%	0.0046	30.457%	0.1163	0.365%	0.0011	0.594%	0.0029	0.015%	0.0001	0.058%	0.0004	0.664%	0.0022
Coastwide														
< 75 fm	2.761%	0.0055	3.584%	0.0082	1.052%	0.0058	2.270%	0.0053	3.765%	0.0069	4.262%	0.0041	3.429%	0.0029
75 - 150 fm	4.008%	0.0050	8.285%	0.0428	3.432%	0.0125	6.121%	0.0126	3.675%	0.0068	8.584%	0.0183	5.278%	0.0051
>150 fm	0.298%	0.0009	7.076%	0.0313	0.199%	0.0004	0.195%	0.0007	0.037%	0.0002	0.146%	0.0010	0.326%	0.0008
	2002				2003									
	Sept.-Oct.		Nov.-Dec.		Jan.-Feb.		March-April		May-June		July-August		Entire second year	
Data collected from September 1, 2002 to August 31, 2003														
North of 40°10' N. lat. (near Cape Mendocino)														
< 75 fm	6.442%	0.0145	2.199%	0.0042	1.656%	0.0136	4.349%	0.0098	1.057%	0.0018	5.153%	0.0134	4.744%	0.0067
75 - 150 fm	2.293%	0.0050	3.102%	0.0164	3.937%	0.0205	10.161%	0.0253	0.935%	0.0037			7.068%	0.0149
>150 fm	0.000%	0.0000	0.348%	0.0010	0.150%	0.0004	0.012%	0.0001	0.062%	0.0004	0.123%	0.0005	0.087%	0.0002
South of 40°10' N. lat. (near Cape Mendocino)														
< 75 fm					3.198%	0.0222	4.013%	0.0116	6.550%	0.0162	2.163%	0.0098	4.540%	0.0083
75 - 150 fm			8.832%	0.0883									8.832%	0.0883
>150 fm	0.091%	0.0009	1.569%	0.0088	0.495%	0.0020	0.000%	0.0000	0.018%	0.0001	0.068%	0.0003	0.325%	0.0012
Coastwide														
< 75 fm	6.442%	0.0145	2.199%	0.0042	1.800%	0.0140	4.311%	0.0088	3.637%	0.0075	3.877%	0.0092	4.715%	0.0059
75 - 150 fm	2.293%	0.0050	3.549%	0.0168	3.937%	0.0205	10.161%	0.0253	0.935%	0.0037			7.079%	0.0148
>150 fm	0.042%	0.0004	0.799%	0.0033	0.272%	0.0008	0.011%	0.0001	0.050%	0.0003	0.110%	0.0004	0.152%	0.0004

WEST COAST GROUND FISH OBSERVER PROGRAM
DATA REPORT AND SUMMARY ANALYSES FOR 2001-2003
COVERAGE OF SABLEFISH-ENDORSED FIXED-GEAR PERMITS

Northwest Fisheries Science Center

February, 2004

Introduction

Goal of this Report

This report is the initial compilation of fixed-gear data collected during the 2001, 2002 and 2003 primary limited entry sablefish fisheries by the West Coast Groundfish Observer Program (WCGOP). The WCGOP also collects at-sea data from limited entry trawl and open access fleets fishing for west coast groundfish. The WCGOP's goal is to collect information on the discard of west coast groundfish to be used in assessing and managing the total fishing mortality of a variety of groundfish species.

The West Coast Fixed Gear Sablefish Fishery

Overview

In order to understand the observer methods, difficulties, and results presented in this report, it is important for the reader to have a basic knowledge of the operation and management of this fishery.

Sablefish are caught along the entire west coast of the United States by vessels using fixed gear. Many of these vessels are part of the limited-entry groundfish fleet, while others fish under the open-access provisions of the fishery management plan. Sablefish is the principal groundfish target species for most limited-entry fixed-gear vessels, which range in length from 33 feet to 95 feet. Limited-entry vessels fish for sablefish primarily north of Monterey, California. Groundfish permits for these vessels can be endorsed for use of longline and/or pot gears. The fleet typically fishes in depths greater than 80 fathoms, and may be restricted to even greater depths under evolving management of the

fishery. Nearly all of the vessels participating in this fishery deliver their iced catch, which is predominantly sablefish, to shoreside processors.

Most of their catch is retained, while a portion can be discarded at sea. Reasons for at-sea discard include unmarketability and attainment of vessel landing limits. Also, since the price paid by processors for sablefish is dependent on fish size, small fish may sometimes be discarded, as fishermen seek to maximize the value of their landed catch allowances. Unlike most rockfish, sablefish do not have swim bladders that explode when the fish are retrieved rapidly from great depth. Consequently, if handled properly, discarded sablefish can experience high rates of survival (Olla, et al., 1998).

Permit tiers

There are approximately 225 permits limited-entry fixed-gear permits (NMFS, NWR, Fisheries Permits Office http://161.55.16.25/main/nwp_system_version3/nwp_public/index_pub_permits.cfm), of which 164 “sablefish-endorsed”. Sablefish-endorsed permits provide the permit holder with an annual share of the sablefish allocated to the primary fishery for fixed-gear permits. Sablefish-endorsed permits are assigned to one of three tiers: 1, 2 or 3. Of the 164 sablefish-endorsed permits, 28 are assigned to Tier 1, 42 to Tier 2, and 94 to Tier 3. Each Tier 1 permit receives 1.4% of the fishery allocation, with Tiers 2 and 3 receiving 0.64% and 0.36%, respectively. Each year, these shares are translated into amounts of poundage, or “tier limits”, which may be caught during the primary fishery. For the 2003 season, these shares translated into tier limits of 53,000 for Tier 1, 24,000 for Tier 2 and 14,000 for Tier 3.

Permits that are not sablefish-endorsed are not permitted to land amounts of sablefish in excess of daily/weekly trip limit provisions. During 2003, daily landing limits ranged from 300 –350 lbs. depending on the area fished. There was also a weekly option that provided the opportunity to make a single delivery during a week, up to a poundage threshold that ranged between 800 and 1,100 pounds. Landings made under either of these options are also capped by a 2-month limit, which normally falls between 2,100 and 3,600 pounds. Outside of the primary season, or following the attainment of their tier

limits, sablefish-endorsed permits may also land sablefish under the provisions of the daily/weekly limit.

Primary Sablefish Season

The primary sablefish fishery currently takes place over a seven-month season from April 1 to October 31. The seven-month season was implemented first in 2002. During 2001, the season was open from August 15, 2001 to October 31, 2001. For several years prior to 2001, tier limits were assigned, but the could only be fished during a roughly 10-day window. Any primary season tonnage left uncaught would then be divided into equal limits that were available to permitted vessels during a two-week “mop-up” fishery. Permit holders can now land their tier limits at anytime during the 7-month season. However, once the primary season opens, all sablefish landed by a sablefish-endorsed permit is counted towards attainment of its tier limit.

Permit stacking

Regulations allow for up to three sablefish-endorsed limited-entry permits to be ‘stacked’ on a single vessel. Stacking additional sablefish-endorsed permits on a vessel allows the vessel to land sablefish up to the sum of the associated tier limits. However, stacking does not convey additive landing limits for any other species, nor for sablefish when caught under the daily/weekly option. For example, using 2003 tier limits, a vessel with a Tier 1 permit which bought or leased an additional Tier 2 and a Tier 3 permit could land a total of 91,000 lbs. of sablefish during the primary fishery (Tier 1 + Tier 2 + Tier 3 = 53,000 lb + 24,000 lb + 14,000 lb). Prior to 2002, there were no provisions for obtaining additional tier limits through permit stacking in this fishery. Permit stacking was implemented to increase the economic efficiency of the fleet and promote fleet capacity reduction.

Fish tickets and logbooks

Fisheries managers and enforcement officers use state-issued sales receipts (fish tickets) to monitor landings. This information is transferred to the Pacific Fisheries Information Network (PacFIN) by state fisheries agencies in Washington, Oregon and California.

Fish tickets are used to ensure that each vessel's landings during the primary fishery do not exceed the sum of the vessel's tier limits. Unlike the groundfish trawl fleet, vessel fishing logbooks are neither required nor routinely collected for the fixed-gear fleet. This absence prevents an analysis comparing observed and unobserved fishing locations. Further, while trawl observers are able to record a vessel's haul-by-haul logbook estimates of retained catch, fixed-gear observers can only rely on their own set-by-set estimates of discarded and retained catch (see Methods).

Methods

West Coast Groundfish Observer Program

On May 24, 2001, NOAA Fisheries (NMFS) established the WCGOP to implement the Pacific Coast Groundfish Fishery Management Plan (50 CFR Part 660). This regulation requires all vessels that participate in the groundfish fishery to carry an observer when notified to do so by NMFS or its designated agent. The observer program's goal is to improve estimates of total catch and discard. The program deploys as many as 40 observers, depending on seasonal variation in fishing activity. These observers are stationed along the coast from Bellingham, WA to San Diego, CA.

Program Goals

During the first year of coverage, the primary goal for the WCGOP was to provide observation of 10% of the coast wide limited entry trawl landings of groundfish species other than whiting (as reported in fish tickets). However, an additional goal was to provide pilot observer coverage in the limited-entry fixed-gear sablefish fishery (The observer coverage plan is available at: www.nwfsc.noaa.gov/fram/observer). During the second year of coverage, the program's goal was to increase trawl coverage and expand coverage of the limited-entry fixed-gear sablefish fishery and open access fisheries.

While a major focus of the WCGOP continues to be the limited entry trawl fleet, the program has accomplished its goal of expanding coverage for both the limited-entry fixed-gear fleet and the open access fleet. This report summarizes data from only the limited-entry primary sablefish fishery for fixed gear.

Permit Selection Process for Sablefish-endorsed Limited-entry Permits

The initial sampling strategy for the West Coast Groundfish Observer Program was intended to provide pilot coverage of the sablefish-endorsed fixed gear fleet. Therefore, only five permits were randomly selected for observer coverage in 2001. The pilot coverage allowed the program to evaluate and refine fixed gear sampling techniques and data recording methods. In 2002, the number of fixed-gear permits selected increased beyond a pilot level. Due to changes in season length and provisions for permit stacking, the selection process has continued to evolve since the program's inception.

Assignment of permits to port groups

The first step in the stratified random selection of permits is to associate each permit with one of the 13 port groups defined by the program. Sablefish-endorsed fixed-gear permits are assigned to a port group based upon the location of the previous year's landings. The use of port groups is designed to produce a distribution of observations along the coast that is reasonably proportional to the volume of landings. Within each port group, permits are placed in a randomly selected order and sequentially selected for observation. For the pilot coverage phase in 2001, port groups were not used in selecting permits. Instead, the complete permit list was randomized and the first five permits were selected for coverage.

Coverage Period

As sablefish-endorsed permits can land tier limit (allotted poundage) at any time during the primary season, permits must be selected for coverage throughout the entire season or until their tier limit are attained. This was the case during the primary fisheries in 2001 and 2003, allowing all fish that were landed against the tier limits of vessels selected in those years to be observed. Because the 7-month duration of the primary season was not introduced until 2002, pilot coverage in fall 2001 fishery did not highlight the need for permits to be selected for up to the full 7-month period. Consequently, the same 2-month selection period used for the trawl fleet was also employed for fixed-gear during 2002. Because permits were selected for only a single two-month period, all landings of tier poundage for selected permits were not necessarily observed.

Complications of Selecting Sablefish-endorsed Permits

Until a primary season sablefish landing has been made on a sablefish-endorsed permit, the permit can be transferred to any other fixed gear vessel. This flexibility, combined with the benefits from stacking, results in greater inter- and intra-year movement of permits between fixed-gear vessels than is observed in the trawl fleet. As mentioned above, a fixed-gear vessel participating in the sablefish-endorsed fishery can have up to three tier permits stacked on it. This environment can lead to several difficulties for observer data collection, including:

1. Tracking of permits and vessels

Because permits can be moved throughout the year, keeping track of the vessel to which a permit is assigned requires continuous monitoring.

Although permit transfers are tracked through NMFS' Fisheries Permits Office in Northwest Regional Office, WCGOP has limited resources to monitor these changes throughout the season. So, while permit owners are initially contacted in January about their selection for coverage, their permits can be transferred to different vessels anytime before they are used to land tier-limit sablefish. In response to this situation, the observer program has adopted a policy of observing whatever vessel a selected permit is eventually fished on, even though that vessel may land fish into a different port group.

2. Attributing landings to a specific permit when stacking occurs

When fish are landed by a vessel that has multiple permits attached to it, there is no requirement to associate all or part of the poundage with a specific permit. Consequently, if a vessel has a mix of selected and unselected permits attached to it, all tier-limit trips must be observed, in order to ensure that the landings of selected permits have been covered. This leads to two complications:

- i. Unselected permits receive coverage – As an example, a vessel with a Tier 1 and a Tier 2 permit attached could land a total of 77,000 pounds of sablefish in 2003. If only the Tier 1 permit were selected for observer coverage, it would still be necessary to

observe all primary season landings, up to 77,000 pounds, to assure that all of the Tier 1 permit's landings had been observed. This interferes with the random selection of permits, since it implies concurrent coverage of a permit that was not selected.

- ii. *Some permits may be covered more than once in a selection cycle before other permits are covered a first time*– As an example, suppose that the unselected Tier 2 permit in the example above was in fact observed, along with the Tier 1 permit, during 2003. Following the season, the Tier 2 permit might remain on the same vessel or might be transferred to another vessel for the 2004 fishery. In either case, it might be selected for coverage in 2004, which would result in its landings having been observed in two consecutive years. In such circumstances, where a permit has been previously covered, though not selected, the WCGOP has adopted the following policy:
 1. Observe the permit if it is attached to a vessel not previously observed for the primary fishery during the current cycle;
 2. Do not observe the permit if it is attached to a vessel that has been observed for the primary fishery during the current cycle.

Fixed Gear Data Collection

The fisheries observers are trained professionals who monitor and record catch data on commercial fishing vessels, following the protocols in the WCGOP Manual (NMFS, NWFSC, 2003, unpublished report). The data collected by the observers include:

- Start time, end time and location of the set
- Gear type and fishing strategy
- Estimated total catch weight (including sets for which there is 100% discard)
- Weight of discard by catch category

- Reason for discard by catch category or species
- Species composition of discard by catch category
- Weight of fish retained by catch category
- Species composition of retained by catch category
- Document catch of prohibited species and incidental take of protected species
- Size composition, tags, and viability assessments for Pacific halibut
- Size composition of discarded fish (from randomly selected categories)
- Size composition of retained fish (from randomly selected categories)
- Basic taxonomic composition of non-fish bycatch
- Special biological collections (otoliths, maturity, food habits, genetic samples, etc.

Fishing Effort Data

Unlike the groundfish trawl fleet, there are no requirements for limited-entry fixed-gear vessels to record trip information in an official logbook. Lacking this source of information, fishing effort data including date, time, position (latitude and longitude), and depth of gear deployment are obtained by one of the following methods:

1. Copying information from skipper's personal logbook,
2. Obtaining readings from vessel instrumentation, including GPS and depth sounders,
3. Identifying set locations using handheld GPS units supplied by the program.

Fish ticket identification numbers are obtained from captains, processing plants, or PSMFC-WCGOP state liaisons and recorded. Observers interview skippers in order to assign a target strategy and gear code to each set. These data are entered into the Trip Form- Haul Locations (Appendix A).

Observed Total Catch

The methods used to estimate the observed total catch (OTC) of a set are: 1) summation of observed retained and discarded fish, and 2) extrapolation of partial observations. Use of method 1 is preferred. However, observers follow these general rules when deciding which method to employ:

1. If all individual fish in a set are counted, the estimated total catch weight is derived by multiplying the number of retained and discarded fish by the appropriate catch category weights from the Catch Form.
2. If all of individual fish in a set are not counted, extrapolation is used. The weights of retained and discarded species in the sample are derived as above, then divided by the number of hooks sampled, and multiplied by the total number of hooks in the set.

OTC's are calculated using the number of hooks or pots set. This accounts for potential fishing mortality from lost gear. These data are recorded on the Trip Form: "Hauls" (Appendix B).

Composition Sampling

Observers sample both retained and discarded catch on fixed gear vessels by tally sampling. Tally sampling means that the observer counts every individual fish that is caught, by species, including fish released from longlines before they are brought onboard, for all hooks or pots in a set, or a randomly selected sample thereof. Total hooks or pots in a set are determined by:

1. Counting all hooks or pots in the set,
2. Multiplying the average number of hooks per skate by the number of skates in a set. When this method is used, observers count hooks on at least 1/5 of the gear fished during each trip.

Catch Category Sampling

Catch categories are assigned, based on species disposition (retained or discarded) and the method employed for determining fish weight. Three methods of determining fish weight are used on fixed gear vessels:

1. Tally Sample – This method is used if all species are counted and an actual or extrapolated weight is obtained.
2. Visual Estimate – This method is used if a species is counted, but an actual or extrapolated weight is not obtained. It is commonly employed for large

species that cannot be weighed, such as big skates. This method is also used when obtaining individual weights could increase release mortality.

3. Pacific halibut length-weight estimate – This method is used for Pacific halibut only. An estimated or actual length is taken and the Length/Weight conversion table generated by the International Pacific Halibut Commission is used to determine weight.

If visual estimates or Pacific halibut length/weights are used, the actual number of fish in the tally sample must be documented for the catch category. These data are recorded on the Fixed Gear Catch Form (Appendix C).

Species Composition Sampling

Species Composition samples are taken for all retained and discarded catch categories using the tally sample weight method. Actual counts, from the tally sample, are used. Weights can be actual (all individuals of species are weighed) or extrapolated from average weight. These data are recorded on the Species Composition Form (Appendix D).

Reasons for Discard

Observers document the reason for discard based on reason provided by the captain or crew for each catch category and/or species. The reasons for discard are categorized as ‘prohibited’, ‘size’, ‘market’, ‘regulation’, ‘other’, ‘drop-off’, and ‘predation’.

When discerning a reason for discard for a species, the primary reason for discard is used. Therefore, the categorizations of ‘drop-off’ and ‘predation’ are only used for fish that would have been retained.

Data Flow

The eight steps of data processing prior to analysis are detailed below.

1. Data are collected at-sea by the observer following the protocols in the WCGOP Manual (NMFS, NWFSC, 2003, unpublished report).

2. Data are entered into the database system.
 - a. During 2003, WCGOP used a web-based graphical user interface (GUI) to directly enter data into a centralized Oracle database located at the Northwest Fisheries Science Center (NWFSC). Data within the Oracle database are accessible via the web-based GUI or by direct SQL queries to the database. For a list of data tables, see appendix E.
3. Quality Control (QC) of calculations and sampling methods.
 - a. A debriefer or lead observer checks all computations made by the observer and reviews form to ensure that it is complete and that appropriate sampling methods were used.
4. Debriefing
 - a. Observers debrief after every two-month cumulative trip limit period.

Debriefing includes:

 - i. Vessel Data - Observers complete a vessel survey for each vessel that explains vessel set-up and basic sampling methodologies.
 - ii. Observer Logbook Review - Observers keep logbooks detailing the events of each trip, basic deck schematics, sampling methods used, communication logs, and confirmation of a current safety decal. Any hauls during which sampling problems occurred are documented in the logbook and reviewed during debriefing.
 - iii. Data Correction - Observer corrects all calculations and errors in data forms.
 - iv. Evaluation - Observers are evaluated on their performance.
5. Data checked and updated in database program.
 - a. Electronic data is compared to raw data to check for keypunch errors.

Also, all corrections discovered during debriefing are updated in the database program.
6. Quality Control (QC) Queries
 - a. Queries are run to detect data fall outside specified ranges or other inconsistencies between data elements.
7. Data updated in database system

- a. The raw data of all entries that are highlighted by the QC queries are reviewed and the electronic data is updated.
8. Data released to analyst team.
 - a. At this point, data are considered complete and ready for analysis.

Results and Discussion

Amounts of observed and unobserved sablefish (in metric tons) landed against tier limits during the primary fixed-gear sablefish seasons of 2001, 2002 and 2003 are listed in Table 1. Because port groups were not used in selecting the 5 permits that were covered during the pilot program in 2001, most port groups received no coverage that year. Beginning in 2002, permits were randomly selected within each port group and more observers were assigned to fixed-gear vessels, resulting in much more comprehensive sampling of the fleet's sablefish fishing.

Table 2 summarizes the coverage of all groundfish species (other than sharks and skates) that were landed as part of this tier-limit sablefish trips. Sablefish is the primary target of vessels participating in this fishery. Comparison of the tonnages between comparable strata in Tables 1 and 2 reveals the small percentage that is comprised by species other than sablefish.

The number of sablefish tier-limit trips and hauls observed during the 2001, 2002 and 2003 seasons are summarized in Tables 3 and 4, respectively. Table 3 reports the distribution of coast wide observed trips among port groups. Please note that the port-group assignment in Table 3 represents the port in which the fish were off-loaded from the vessel, not necessarily the port at which the fish were processed. Port-group assignments in Tables 1 and 2 reflect ports as recorded on fish tickets. In cases where fish are trucked to a different port following off-loading, this can result in apparent discrepancies between Table 3 and Tables 1 and 2. Table 4 summarizes the number of sets that were observed by general depth strata. During each year, a high percentage of

observed sets are assigned to the ‘deep’ strata in the table. The dividing depth between deep and shallow used in this table was 100 fathoms for sets made north of 40°10’ N. lat., 150 fathoms for the few observed sets made south of 40°10’ N. lat.

It is important to note that WCGOP controls only the selection of permits for coverage. The activity of the selected vessels can vary in unpredictable ways. Therefore, the program cannot control the percentage of tonnage or trips that are observed. Also, the current sampling protocol does not separate longline from pot permits. As a result, coverage levels within each gear type, particularly within a port group, may vary widely from one year to the next, depending on which permits are selected. In the future, as patterns in vessel activity emerge, the coverage levels can be more easily controlled.

Amounts and rates of discard for 25 species or species groups encountered on observed sets are summarized in Table 5. For each species, the decision to discard is dependent not only upon levels of cumulative retained catch and corresponding landing limits, but also the size, condition, and marketability of the fish. For many marketable species, such as lingcod, thornyheads, and slope rockfish, retention rates are generally high. In other cases, such as yelloweye rockfish, retention has not been allowed, in order to prevent targeting. In the case of Pacific halibut, only vessels with halibut licenses fishing within the designated halibut season may retain halibut.

Bycatch ratios for overfished species caught on observed sets are summarized in Table 6, by gear, year, and depth strata. The bycatch ratios are calculated by dividing the total poundage caught of each species by the retained poundage of sablefish. Not surprisingly, bycatch of overfished shelf species is generally much higher in the shallow depth stratum. For example, the 3-year average bycatch ratio for lingcod is 2.78% in the shallow zone and 0.44% in the deep zone. Average bycatch ratios for yelloweye and canary rockfishes also exceed 1% in the shallow zone and are more than an order of magnitude smaller in the deep zone. Average bycatch ratios for overfished slope rockfish (darkblotched and Pacific ocean perch) are less than 0.05%, even in the deep zone. Caution is urged in the

use of bycatch for bocaccio and cowcod, since no landings south of Ft. Bragg, California are included in the data set.

Table 7 reports three measures of species discard, and their associated standard errors, for 26 species encountered on observed sets. The first measure is the percentage of each species that was discarded. This is the same measure as reported in Table 5, except that results in Table 7 are presented for each depth zone. The second measure reflects discard per unit of effort. In this table, effort is calculated as the duration of the set times the number of hooks or pots used. For purposes of presentation, these values were also multiplied by 1000. The third measure relates discarded poundage of each species to the retained poundage of sablefish.

Tables 8a-8c summarize bycatch ratios for overfished species and sablefish discard, within an assortment of depth categories that may be useful for evaluating management alternatives. Table 8a provides combined results for both gear types. Table 8b and 8c utilize the same format to display results for longline and pot gears, respectively.

Most sets have small or no amount of discarded of sablefish, shortspine thornyheads, canary rockfish, yelloweye rockfish, darkblotched rockfish, and lingcod as displayed in Figures 1-6. A few sets had a higher amount of discard as displayed in Figure 1. Approximately seventy-five sets had over 600 lbs. of discard in 2002.

References

NMFS, NWR (Northwest Region), NMFS-SEA-03-07, Pacific Coast Groundfish Fishery Limited Entry Fixed Gear Sablefish Primary Season Begins April 1, 2003, March 12, 2003)

Olla, B.L., M.W. Davis, and C.B. Schreck, "Temperature magnified postcapture mortality in adult sablefish after simulated trawling," *Journal of Fish Biology* (1998) **53**, 743-751.

Appendix A. Trip Form- Haul Locations.

LE OA _EFP

USCG #

Trip Number

Vessel Name _____

Logbook # _____

Skipper First Name _____

Skipper Last Name _____

State Registration # (OA only) _____

Departure Date/Time _____

Departure Port _____

Landing Date/Time _____

Landing Port _____

Fish Tickets

State Agency Code

Trip Notes:

TRIP FORM - HAUL LOCATIONS

Observer name _____ Year _____

Page ____ of ____

Haul/ Set #		DATE		TIME (24-hour clock)	LATITUDE		LONGITUDE		Depth of catch (fathoms)	Gear Type	Target Strategy
		Month	Day		Degrees	Minutes	Degrees	Minutes			
	Start ¹					-		-			
	End ²					-		-			
	Start ¹					-		-			
	End ²					-		-			
	Start ¹					-		-			
	End ²					-		-			
	Start ¹					-		-			
	End ²					-		-			
	Start ¹					-		-			
	End ²					-		-			
	Start ¹					-		-			
	End ²					-		-			
	Start ¹					-		-			
	End ²					-		-			
	Start ¹					-		-			
	End ²					-		-			
	Start ¹					-		-			
	End ²					-		-			
	Start ¹					-		-			
	End ²					-		-			

Start¹ - Time the brake is set End² - Time the brake is set

Appendix B. Trip Form- Hauls

TRIP FORM - HAULS

Weight UM: LBS

Volume UM: M³

Density UM: LBS/M³

Haul/ Set #	Observer Total Catch Estimate	Volume of Codend or Trawl Alley/Bin	Density	Weight Method	Total Hooks/ Pots	Gear Perf	Beaufort	Comments
Key- punch Check								

Appendix C. Fixed Gear Catch Form

Haul #

FIXED GEAR CATCH FORM*

Page ____ of ____

Date Trip Number USCG #

Catch #	R or D	Catch Category	Sample Weight	#'s of Fish Req. for wt. methods 4, 6, 9	# Hooks/Pots sampled by catch category	Weight Method	Catch Purity	Discard Reason	Vessel Estimate	Comments
Keypunch Checks										

*Gear Types 6, 7, 8, 9, 10, 15, 16

January 2004
Fixed Gear Catch Form v. 4

Appendix D. Species Composition Form

Haul #

SPECIES COMPOSITION FORM

Page ____ of ____

Date

Trip Number

USCG #

Catch #	Catch Category	Sample Method	Basket #	KP Weight	R or D	Species	Species Code	Sample Weight	Fish #	Discard Reason	Basket Weight	#	Basket Weight	#
				KP Number										

Method : 1-Whole haul species 2-Single basket 3-Multiple basket 4-Fixed Gear Sample
 Reason for discard: 1-Prohibited 2-Size 3-Market 4-Regulation 5-Other 6-Drop-off 7 - Predation

Species Composition Form v.3
 January 2004

Appendix E. Oracle Database

Database Table Hierarchy

TRIPS

► FISHING_ACTIVITIES

► FISHING_LOCATIONS

► CATCHES

► SPECIES COMPOSITION

► SPECIES_COMPOSITION_ITEMS

► BIO_SPECIMENS

► BIO_SPECIMEN_ITEMS

► DISSECTIONS

Database Table Descriptions

The database tables listed in the table below are a subset of the total tables contained in the Oracle database. They represent the tables that are actually used to contain the observer data collected by the WCGOP.

BIO_SPECIMENS	Sets of species physical measurements resulting from sampling catches occurring in a haul or set
BIO_SPECIMEN_ITEMS	Physical measurements collected for an individual fish, mammal or bird occurring in a biological sample
CATCHES	PacFIN catch category based on estimates of fish caught during a haul or set
CATCH_CATEGORIES	PacFIN catch categories
DISSECTIONS	Physical specimens collected for an individual fish, mammal or bird
FISHING_ACTIVITIES	Fishing hauls or sets occurring during a trip
FISHING_LOCATIONS	Locations of hauls or sets
PORTS	Coastal cities where fishing activity is based out of
SPECIES	Fish, mammal and bird species that might be encountered during fishing
SPECIES_COMPOSITIONS	Sets of species weights and counts resulting from sampling catches occurring in a haul or set
SPECIES_COMPOSITIONS_ITEMS	Weights and counts for individual species occurring in a species composition sample
TRIPS	Sets of fishing activities that occur between the time a vessel leaves port and when it returns
VESSELS	Trawl, longline, pot or other fishing vessels

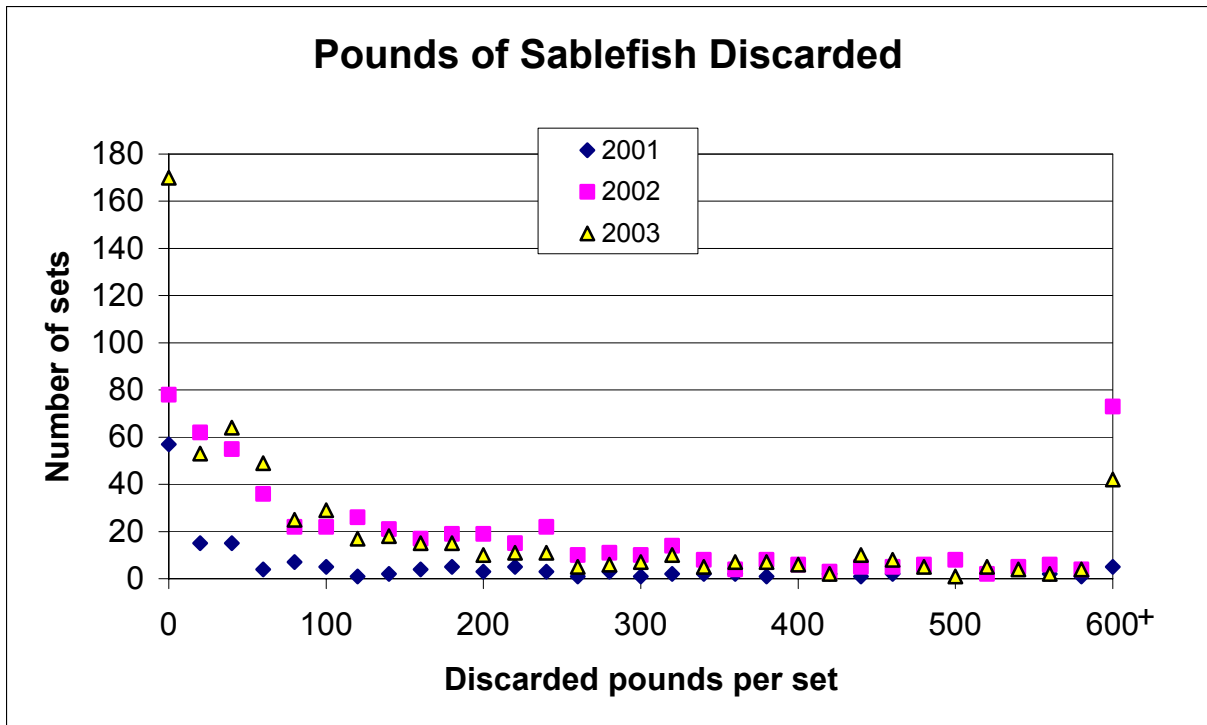


Figure 1. Discarded pounds of sablefish per set by year.

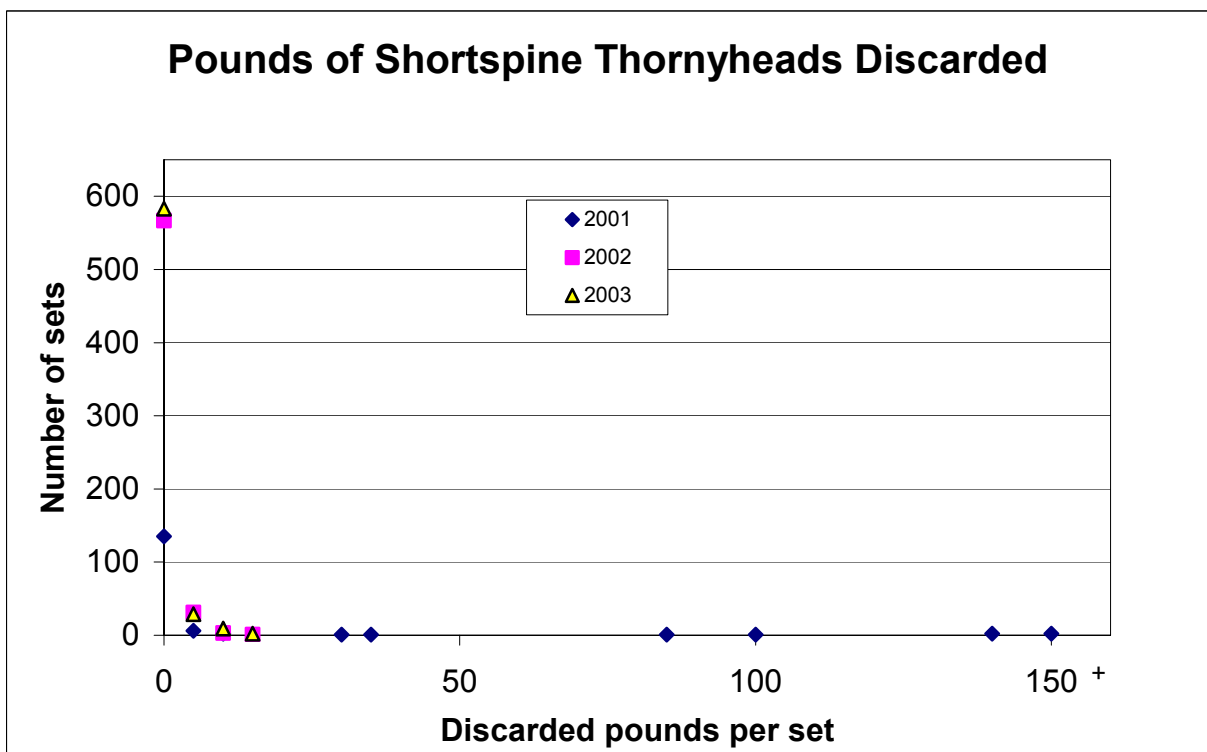


Figure 2. Discarded pounds of shortspine thornyheads per set by year.

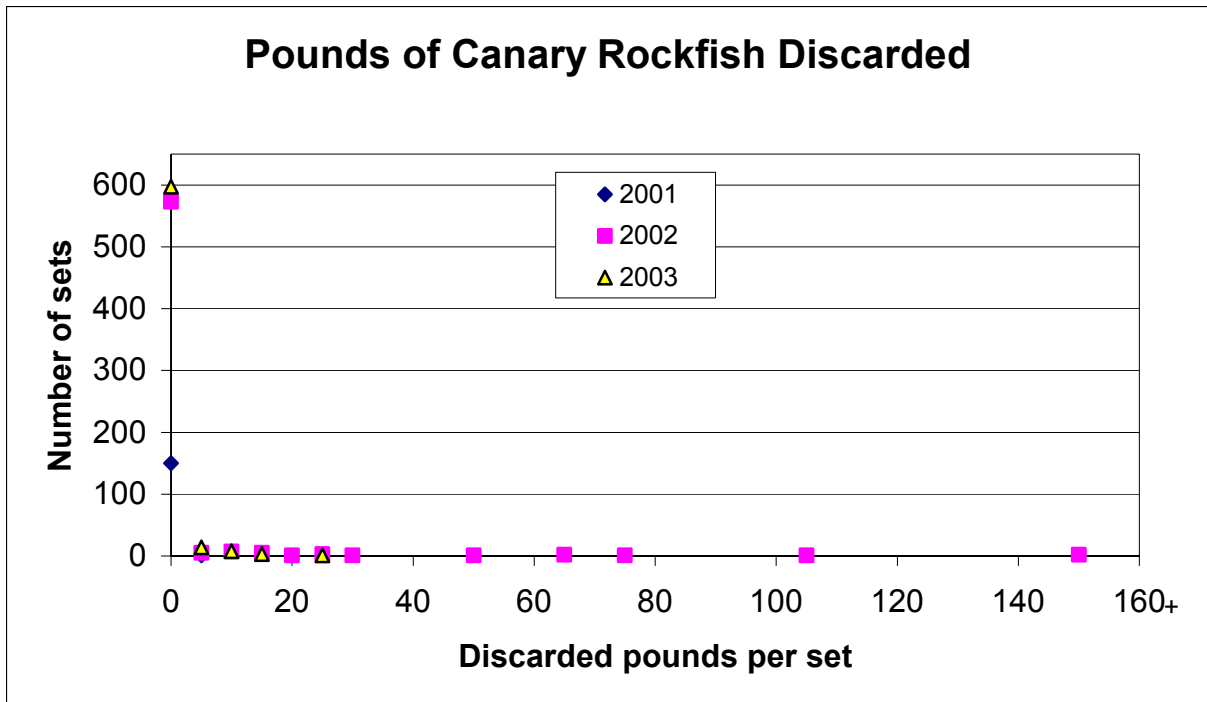


Figure 3. Discarded pounds of canary rockfish per set by year.

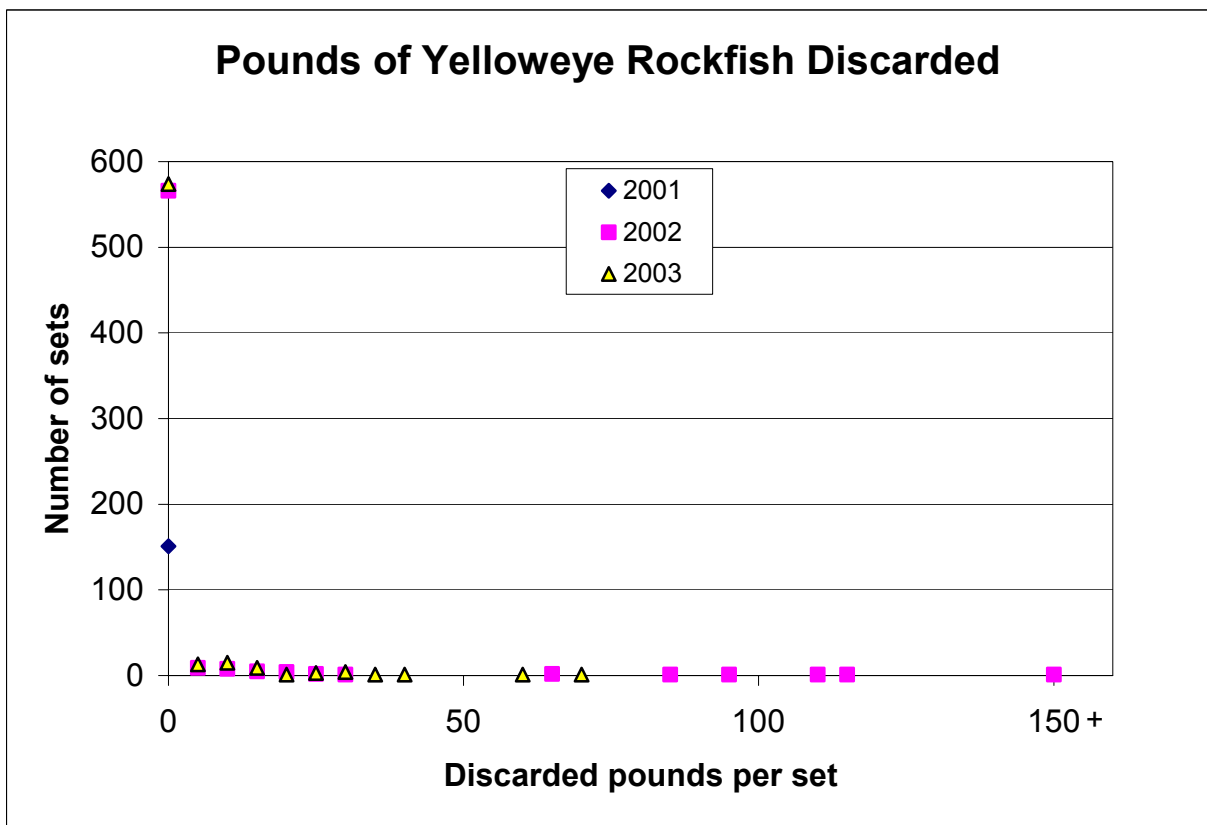


Figure 4. Discarded pounds of yelloweye rockfish per set by year.

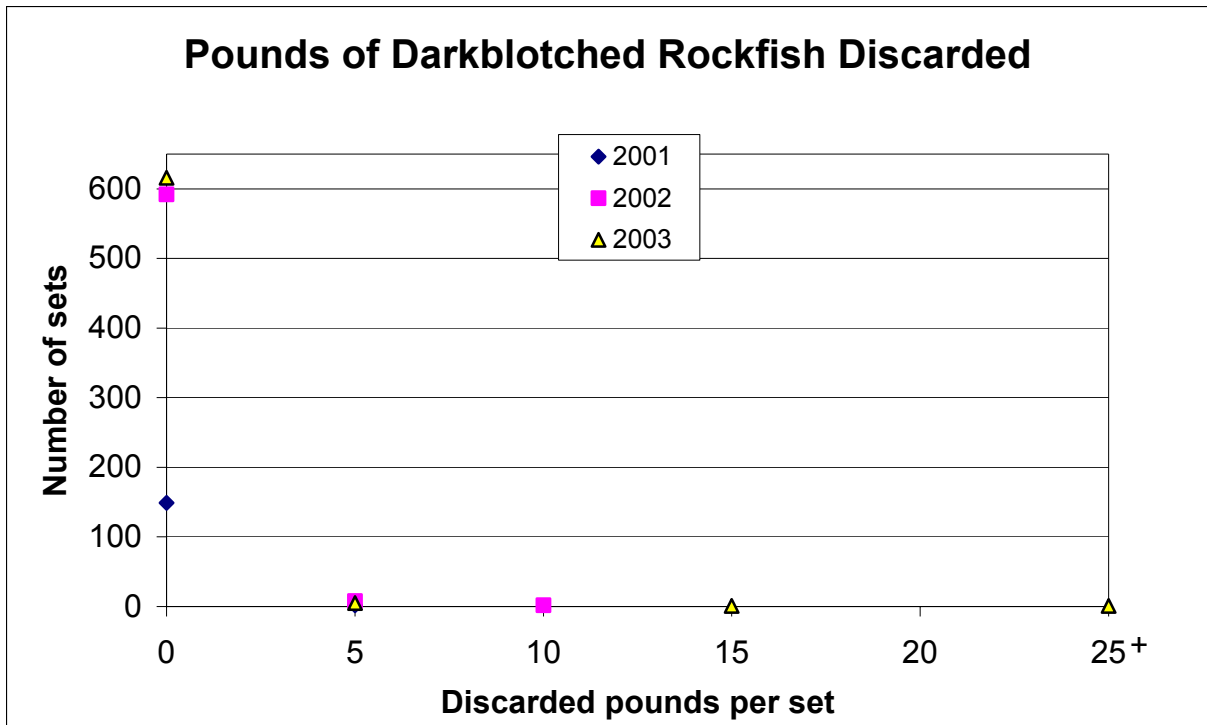


Figure 5. Discarded pounds of darkblotched rockfish per set by year.

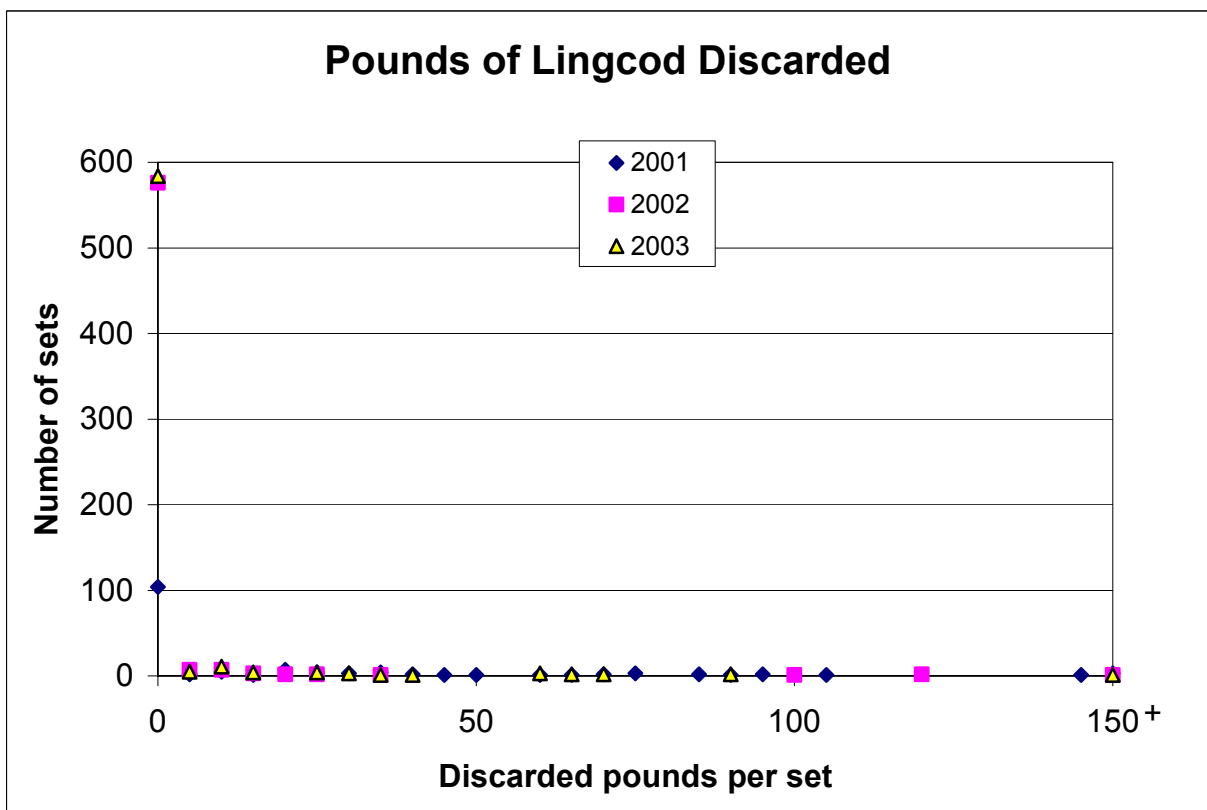


Figure 6. Discarded pounds of lingcod per set by year.

Table 1. Percentage of primary tier-limit sablefish catch landed by sablefish-endorsed fixed-gear vessels during 2001-2003 that was observed by the West Coast Groundfish Observer Program.

Year	Port Group (based on fishtickets)	Hook and line				Pot					
		Not observed		Observed		Total metric tons	Not observed		Observed		Total metric tons
		metric tons	% of gear total	metric tons	% of gear total		metric tons	% of gear total	metric tons	% of gear total	
2001											
	Puget Sound	209	86%	35	14%	244					
	Neah Bay	111	100%			111					
	Astoria	238	98%	5	2%	244	86	77%	26	23%	112
	Newport	91	64%	51	36%	142	206	97%	5	3%	212
	Coos Bay	63	100%			63	164	100%			164
	Crecent City	119	100%			119	51	100%			51
	Eureka	43	100%			43					
	Fort Bragg	78	100%			78					
	San Francisco	74	100%			74					
	Monterey	50	100%			50					
	All ports	1,075	92%	91	8%	1,166	508	94%	31	6%	539
2002											
	Puget Sound	150	64%	84	36%	233					
	Neah Bay	69	92%	6	8%	75					
	Astoria	125	82%	27	18%	152	66	78%	18	22%	84
	Newport	66	95%	3	5%	69	108	91%	10	9%	118
	Coos Bay	20	43%	26	57%	46	79	68%	37	32%	116
	Crecent City	36	56%	28	44%	64	29	58%	21	42%	49
	Eureka	45	86%	7	14%	52					
	Fort Bragg	19	71%	7	29%	26	8	100%			8
	San Francisco	26	100%			26					
	Monterey	25	100%			25	5	100%			5
	All ports	579	75%	188	25%	767	294	77%	86	23%	381
2003											
	Puget Sound	149	67%	74	33%	223	10	100%			10
	Neah Bay	88	100%			88			13	100%	13
	Astoria	106	79%	28	21%	133	105	65%	56	35%	162
	Newport	134	77%	40	23%	175	37	24%	120	76%	157
	Coos Bay	51	100%			51	129	93%	9	7%	139
	Crecent City	76	95%	4	5%	80	21	100%			21
	Eureka	15	100%			15					
	Fort Bragg	23	58%	17	42%	40	11	100%			11
	San Francisco	14	100%			14					
	Monterey	19	100%			19	7	100%			7
	All ports	675	81%	162	19%	837	321	62%	198	38%	519

Table 2. Percentage of the catch of all groundfish (excluding shark and skate) landed by sablefish-endorsed fixed-gear vessels on tier-limit trips during the primary sablefish seasons in 2001-2003 that was observed by the West Coast Groundfish Observer Program.

Year	Port Group (based on fishtickets)	Hook and line					Pot				
		Not observed		Observed		Total	Not observed		Observed		Total
		metric tons	% of gear total	metric tons	% of gear total	metric tons	metric tons	% of gear total	metric tons	% of gear total	metric tons
2001											
	Puget Sound	217	86%	37	14%	254					
	Neah Bay	119	100%			119					
	Astoria	249	98%	6	2%	254	89	78%	26	22%	114
	Newport	93	64%	52	36%	145	208	97%	5	3%	214
	Coos Bay	65	100%			65	164	100%			164
	Crecent City	123	100%			123	51	100%			51
	Eureka	45	100%			45					
	Fort Bragg	88	100%			88					
	San Francisco	82	100%			82					
	Monterey	58	100%			58					
	All ports	1,141	92%	94	8%	1,235	512	94%	31	6%	543
2002											
	Puget Sound	160	64%	89	36%	249					
	Neah Bay	77	92%	6	8%	83					
	Astoria	132	82%	28	18%	161	67	78%	19	22%	86
	Newport	71	95%	3	5%	74	108	91%	10	9%	119
	Coos Bay	20	43%	26	57%	46	80	68%	37	32%	116
	Crecent City	38	57%	29	43%	67	29	58%	21	42%	50
	Eureka	52	86%	8	14%	60					
	Fort Bragg	21	73%	8	27%	29	8	100%			8
	San Francisco	30	100%			30					
	Monterey	34	100%			34	6	100%			6
	All ports	635	76%	199	24%	833	297	77%	87	23%	384
2003											
	Puget Sound	158	66%	80	34%	238	10	100%			10
	Neah Bay	92	100%			92			13	100%	13
	Astoria	110	79%	29	21%	140	108	66%	57	34%	166
	Newport	137	77%	41	23%	178	38	24%	121	76%	158
	Coos Bay	51	100%			51	129	93%	9	7%	139
	Crecent City	78	95%	4	5%	83	21	100%			21
	Eureka	16	100%			16					
	Fort Bragg	24	56%	20	44%	44	11	100%			11
	San Francisco	16	100%			16					
	Monterey	33	100%			33	7	100%			7
	All ports	716	81%	173	19%	890	324	62%	201	38%	525

Table 3. Number of observed limited entry, fixed-gear primary sablefish fishery trips, by calendar year, port group, and gear.

Port Group	Hook and line		Pot		All gears	
	Number of trips	% of coastwide	Number of trips	% of coastwide	Number of trips	% of coastwide
2001						
Puget Sound	3	30%			3	17%
Astoria			8	100%	8	44%
Newport	7	70%			7	39%
All ports	10	100%	8	100%	18	100%
2002						
Puget Sound	6	10%			6	8%
Neah Bay	13	22%			13	16%
Astoria	3	5%	3	14%	6	8%
Newport	2	3%	3	14%	5	6%
Coos Bay	10	17%	2	9%	12	15%
Crecent City	16	28%	14	64%	30	38%
Eureka	6	10%			6	8%
Fort Bragg	2	3%			2	3%
All ports	58	100%	22	100%	80	100%
2003						
Puget Sound	4	10%			4	6%
Neah Bay	7	17%	2	8%	9	13%
Astoria	15	37%			15	22%
Newport	6	15%	21	81%	27	40%
Coos Bay			3	12%	3	4%
Crecent City	5	12%			5	7%
Fort Bragg	4	10%			4	6%
All ports	41	100%	26	100%	67	100%

Note: Port assignments based on the observed port where off-loading occurred.

Table 4. Number of observed limited entry, fixed-gear primary sablefish fishery sets, by calendar year, depth strata, and gear.

Depth *	Hook and line		Pot		All gears	
	Number of sets	% by depth strata	Number of sets	% by depth strata	Number of sets	% by depth strata
2001						
Deep	80	99	27	40	107	72
Shallow	1	1	41	60	42	28
All Depths	81	100	68	100	149	100
2002						
Deep	290	83	239	99	529	90
Shallow	58	17	2	1	60	10
All Depths	348	100	241	100	589	100
2003						
Deep	311	97	279	100	590	98
Shallow	11	3			11	2
All Depths	322	100	279	100	601	100

* The depths used to partition sets into deep and shallow strata were 100 fm north of 40°10' N. lat., and 150 fm south of 40°10' N. lat.

Table 5. Discard rates for species taken in the limited entry, fixed-gear primary sablefish fishery, by gear and calendar year.

	Hook and line						Pot					
	2001		2002		2003		2001		2002		2003	
	pounds	% of total	pounds	% of total	pounds	% of total	pounds	% of total	pounds	% of total	pounds	% of total
Bocaccio rockfish												
discarded			10	100%								
retained	None				76	100%	None		None		None	
total	Observed		10	100%	76	100%	Observed		Observed		Observed	
Canary rockfish												
discarded			978	95%	160	59%	2	100%				
retained	None		52	5%	110	41%			None		None	
total	Observed		1,030	100%	270	100%	2	100%	Observed		Observed	
Widow rockfish												
discarded	None		7	100%	10	100%	None		None		None	
total	observed		7	100%	10	100%	observed		observed		observed	
Yelloweye rockfish												
discarded			978	95%	646	89%						
retained	18	100%	56	5%	81	11%		2%	100		None	
total	18	100%	1,034	100%	727	100%		2%	100		Observed	
Darkblotched rockfish												
discarded			39	36%	44	16%	1	100%				
retained	7	100%	68	64%	230	84%			8	100%	41	100%
total	7	100%	107	100%	275	100%	1	100%	8	100%	41	100%
Pacific ocean perch												
discarded					4	13%						
retained	None		166	100%	24	87%	None		2	100%	None	
total	Observed		166	100%	27	100%	Observed		2	100%	Observed	
Lingcod												
discarded	60	52%	687	29%	1,075	29%	2,354	98%			133	79%
retained	56	48%	1,644	71%	2,594	71%	54	2%	608	100%	35	21%
total	116	100%	2,331	100%	3,669	100%	2,408	100%	608	100%	168	100%
Sablefish												
discarded	15,064	7%	81,152	17%	67,640	13%	2,403	5%	77,898	31%	37,186	11%
retained	185,976	93%	386,389	83%	452,465	87%	45,618	95%	171,053	69%	304,353	89%
total	201,041	100%	467,541	100%	520,105	100%	48,021	100%	248,950	100%	341,540	100%
Pacific hake												
discarded	106	100%	139	92%	81	100%	2	100%				
retained			12	8%					None		None	
total	106	100%	152	100%	81	100%	2	100%	Observed		Observed	
Roundfish other than lingcod, sablefish and hake												
discarded	575	100%	848	74%	658	33%	None		1	5%	2,239	77%
retained			295	26%	1,307	67%	Observed		17	95%	669	23%
total	575	100%	1,143	100%	1,965	100%			18	100%	2,908	100%

Table 5 (cont.). Discard rates for species taken in the limited entry, fixed-gear primary sablefish fishery, by gear and calendar year.

	Hook and line						Pot					
	2001		2002		2003		2001		2002		2003	
	pounds	% of total	pounds	% of total	pounds	% of total	pounds	% of total	pounds	% of total	pounds	% of total
Dover sole												
discarded	18	100%	2,549	98%	772	93%	57	88%	457	63%	202	27%
retained			64	2%	60	7%	8	12%	274	37%	538	73%
total	18	100%	2,613	100%	832	100%	65	100%	731	100%	741	100%
Arrowtooth flounder												
discarded	4,394	100%	9,767	64%	10,195	64%	49	100%	142	49%	809	90%
retained	10	0%	5,414	36%	5,612	36%	.	.	148	51%	94	10%
total	4,404	100%	15,181	100%	15,807	100%	49	100%	290	100%	903	100%
Petrale sole												
discarded	None		37	4%	28	13%	2	100%			None	
retained	Observed		896	96%	181	87%			1	100%	Observed	
total			933	100%	209	100%	2	100%	1	100%		
Other flatfish												
retained	None		402	100%	None		None		None		2	100%
total	observed		402	100%	observed		observed		observed		2	100%
Longspine thornyhead												
discarded	None		0	0%	None		None		0	32%	3	70%
retained	Observed		110	100%	Observed		Observed		1	68%	2	30%
total			111	100%					1	100%	5	100%
Shortspine thornyhead												
discarded	982	28%	72	5%	121	7%	7	100%	8	16%	24	5%
retained	2,507	72%	1,515	95%	1,593	93%			41	84%	499	95%
total	3,489	100%	1,587	100%	1,714	100%	7	100%	48	100%	523	100%
Mixed thornyheads												
discarded	190	29%	10	6%	2	3%	None		None		None	
retained	473	71%	153	94%	56	97%	Observed		Observed		Observed	
total	664	100%	163	100%	58	100%						
Yellowtail rockfish												
discarded	None		83	32%	47	13%	None		None		None	
retained	Observed		180	68%	320	87%	Observed		Observed		Observed	
total			263	100%	367	100%						
Shelf rockfish other than those listed individually												
discarded	17	48%	1,150	56%	727	32%	6	74%				
retained	19	52%	914	44%	1,562	68%	2	26%	33	100%	48	100%
total	36	100%	2,063	100%	2,289	100%	8	100%	33	100%	48	100%
Slope rockfish other than darkblotched and POP												
discarded	32	3%	1,143	15%	1,830	12%	50	74%	8	1%		
retained	1,188	97%	6,272	85%	13,756	88%	18	26%	583	99%	901	100%
total	1,220	100%	7,414	100%	15,586	100%	68	100%	591	100%	901	100%

	Hook and line						Pot					
	2001		2002		2003		2001		2002		2003	
	pounds	% of total	pounds	% of total	pounds	% of total	pounds	% of total	pounds	% of total	pounds	% of total
Black rockfish retained total	None observed		177	100%	177	100%	None observed		None observed		None observed	
Nearshore rockfish other than black retained total	None observed		1	100%	1	100%	None observed		None observed		None observed	
Cabazon retained total	None observed		11	100%	11	100%	None observed		None observed		None observed	
Pacific Halibut discarded	15,299	91%	68,922	81%	101,188	84%	2,028	100%	2,081	100%	163	100%
retained	1,543	9%	16,197	19%	19,247	16%						
total	16,842	100%	85,119	100%	120,435	100%	2,028	100%	2,081	100%	163	100%
Salmon discarded total	None observed		None observed		8	100%	None observed		None observed		None observed	
					8	100%						

	Hook and line						Pot					
	2001		2002		2003		2001		2002		2003	
	pounds	% of total	pounds	% of total	pounds	% of total	pounds	% of total	pounds	% of total	pounds	% of total
Black rockfish retained total	None observed		177	100%	177	100%	None observed		None observed		None observed	
Nearshore rockfish other than black retained total	None observed		1	100%	1	100%	None observed		None observed		None observed	
Cabazon retained total	None observed		11	100%	11	100%	None observed		None observed		None observed	
Pacific Halibut discarded	15,299	91%	68,922	81%	101,188	84%	2,028	100%	2,081	100%	163	100%
retained	1,543	9%	16,197	19%	19,247	16%						
total	16,842	100%	85,119	100%	120,435	100%	2,028	100%	2,081	100%	163	100%
Salmon discarded total	None observed		None observed		8	100%	None observed		None observed		None observed	
					8	100%						

Table 6. Bycatch ratios of sablefish and 8 overfished species in the limited entry, fixed-gear primary sablefish fishery, by gear, year, and depth strata.

Species Depth strata ¹	Hook and line				Pot			
	2001	2002	2003	All years	2001	2002	2003	All years
Sablefish								
deep								
no. of observed sets	80	290	311	681	27	239	279	545
bycatch ratio ²	108.4%	120.4%	115.2%	115.7%	102.6%	145.3%	112.2%	123.1%
std. err. of bycatch ratio	0.0969	0.0816	0.0780	0.0511	0.1762	0.1377	0.0709	0.0644
shallow								
no. of observed sets	1	58	11	70	41	2	No sets	43
bycatch ratio ²	100.0%	125.4%	106.4%	119.3%	107.7%	208.4%	No sets	110.2%
std. err. of bycatch ratio		0.2808	0.1906	0.2275	0.2521	2.0824		0.2528
Bocaccio rockfish								
deep								
no. of observed sets	80	290	311	681	27	239	279	545
bycatch ratio ²	0.000%	0.003%	0.017%	0.009%	0.000%	0.000%	0.000%	0.000%
std. err. of bycatch ratio	0.0969	0.0000	0.0001	0.0000	0.1762	0.1377	0.0709	0.0644
shallow								
no. of observed sets	1	58	11	70	41	2	No sets	43
bycatch ratio ²	0.000%	0.000%	0.000%	0.000%	0.000%	0.000%	No sets	0.000%
std. err. of bycatch ratio		0.2808	0.1906	0.2275	0.2521	2.0824		0.2528
Canary rockfish								
deep								
no. of observed sets	80	290	311	681	27	239	279	545
bycatch ratio ²	0.000%	0.092%	0.032%	0.047%	0.000%	0.000%	0.000%	0.000%
std. err. of bycatch ratio	0.0969	0.0003	0.0001	0.0001	0.1762	0.1377	0.0709	0.0644
shallow								
no. of observed sets	1	58	11	70	41	2	No sets	43
bycatch ratio ²	0.000%	1.487%	0.908%	1.243%	0.007%	0.000%	No sets	0.007%
std. err. of bycatch ratio		0.0064	0.0075	0.0048	0.0001	2.0824		0.0001
Cowcod rockfish								
deep								
no. of observed sets	80	290	311	681	27	239	279	545
bycatch ratio ²	0.000%	0.000%	0.000%	0.000%	0.000%	0.000%	0.000%	0.000%
std. err. of bycatch ratio	0.0969	0.0003	0.0001	0.0001	0.1762	0.1377	0.0709	0.0644
shallow								
no. of observed sets	1	58	11	70	41	2	No sets	43
bycatch ratio ²	0.000%	0.000%	0.000%	0.000%	0.000%	0.000%	No sets	0.000%
std. err. of bycatch ratio		0.0064	0.0075	0.0048	0.0001	2.0824		0.0001
Widow rockfish								
deep								
no. of observed sets	80	290	311	681	27	239	279	545
bycatch ratio ²	0.000%	0.000%	0.002%	0.001%	0.000%	0.000%	0.000%	0.000%
std. err. of bycatch ratio	0.0969	0.0003	0.00002	0.0000	0.1762	0.1377	0.0709	0.0644
shallow								
no. of observed sets	1	58	11	70	41	2	No sets	43
bycatch ratio ²	0.000%	0.015%	0.000%	0.011%	0.000%	0.000%	No sets	0.000%
std. err. of bycatch ratio		0.0002	0.0075	0.0001	0.0001	2.0824		0.0001

¹ The depths used to partition sets into deep and shallow strata were 100 fm north of 40°10' N. lat., and 150 fm south of 40°10' N. lat.

² Bycatch ratios are calculated as total pounds caught of each species divided by the retained sablefish poundage.

Table 6 (cont.). Bycatch ratios of sablefish and 8 overfished species in the limited entry, fixed-gear primary sablefish fishery, by gear, year, and depth strata.

Species Depth strata ¹	Hook and line				Pot			
	2001	2002	2003	All years	2001	2002	2003	All years
Yelloweye rockfish								
deep								
no. of observed sets	80	290	311	681	27	239	279	545
bycatch ratio ²	0.0%	0.1%	0.1%	0.1%	0.0%	0.0%	0.0%	0.0%
std. err. of bycatch ratio	0.0001	0.0002	0.0003	0.0001	0.1762	0.0000	0.0709	0.0000
shallow								
no. of observed sets	1	58	11	70	41	2	No sets	43
bycatch ratio ²	0.0%	1.7%	0.5%	1.3%	0.0%	0.0%	No sets	0.0%
std. err. of bycatch ratio		0.0057	0.0048	0.0042	0.0001	2.0824	No sets	0.0001
Darkblotched rockfish								
deep								
no. of observed sets	80	290	311	681	27	239	279	545
bycatch ratio ²	0.004%	0.032%	0.063%	0.041%	0.007%	0.005%	0.013%	0.010%
std. err. of bycatch ratio	0.0000	0.0001	0.0002	0.0001	0.0000	0.0000	0.0001	0.0000
shallow								
no. of observed sets	1	58	11	70	41	2	No sets	43
bycatch ratio ²	0.000%	0.000%	0.000%	0.000%	0.000%	0.000%	No sets	0.000%
std. err. of bycatch ratio		0.0057	0.0048	0.0042	0.0001	2.0824	No sets	0.0001
Pacific ocean perch								
deep								
no. of observed sets	80	290	311	681	27	239	279	545
bycatch ratio ²	0.000%	0.047%	0.006%	0.020%	0.000%	0.001%	0.000%	0.000%
std. err. of bycatch ratio	0.0000	0.0002	0.0000	0.0001	0.0000	0.0000	0.0001	0.0000
shallow								
no. of observed sets	1	58	11	70	41	2	No sets	43
bycatch ratio ²	0.000%	0.011%	0.000%	0.008%	0.000%	0.000%	No sets	0.000%
std. err. of bycatch ratio		0.0000	0.0048	0.0000	0.0001	2.0824	No sets	0.0001
Lingcod								
deep								
no. of observed sets	80	290	311	681	27	239	279	545
bycatch ratio ²	0.033%	0.389%	0.647%	0.440%	4.182%	0.357%	0.055%	0.343%
std. err. of bycatch ratio	0.0002	0.0008	0.0012	0.0006	0.0134	0.0009	0.0003	0.0007
shallow								
no. of observed sets	1	58	11	70	41	2	No sets	43
bycatch ratio ²	1.003%	2.097%	5.749%	2.780%	6.317%	0.000%	No sets	6.161%
std. err. of bycatch ratio		0.0078	0.0307	0.0090	0.0169	2.0824	No sets	0.0165

¹ The depths used to partition sets into deep and shallow strata were 100 fm north of 40°10' N. lat., and 150 fm south of 40°10' N. lat.

² Bycatch ratios are calculated as total pounds caught of each species divided by the retained sablefish poundage.

Table 7. Three measures of discard, and associated standard errors, for selected species in the limited entry, fixed-gear primary sablefish fishery, by gear, year, and depth strata.

Species Depth strata 1	Hook and line				Pot			
	2001	2002	2003	All years	2001	2002	2003	All years
Bocaccio rockfish								
deep								
number of observed sets	80	290	311	681	27	239	279	545
species discard percentage		100.0%	0.0%	11.4%				
std. err. of species discard %		1.0000		0.0510				
discarded lb per unit of effort ²	Not observed	0.002	0.000	0.001	Not observed	Not observed	Not observed	Not observed
std. err. of discard lb/effort		0.0019		0.0007				
discarded lb per retained sablefish lb		0.003%	0.000%	0.001%				
std. err. of discard lb/sablefish lb		0.0000		0.0000				
shallow								
number of observed sets	1	58	11	70	41	2	0	43
species discard percentage								
std. err. of species discard %								
discarded lb per unit of effort 2	Not observed	Not observed	Not observed	Not observed	Not observed	Not observed	Not observed	Not observed
std. err. of discard lb/effort								
discarded lb per retained sablefish lb								
std. err. of discard lb/sablefish lb								
Canary rockfish								
deep								
number of observed sets	80	290	311	681	27	239	279	545
species discard percentage		89.3%	100.0%	92.6%				
std. err. of species discard %		0.4224	0.3599	0.3249				
discarded lb per unit of effort 2	Not observed	0.054	0.023	0.030	Not observed	Not observed	Not observed	Not observed
std. err. of discard lb/effort		0.0211	0.0063	0.0081				
discarded lb per retained sablefish lb		0.082%	0.032%	0.043%				
std. err. of discard lb/sablefish lb		0.0003	0.0001	0.0001				
shallow								
number of observed sets	1	58	11	70	41	2	0	43
species discard percentage		97.4%	16.4%	84.9%	100.0%			100.0%
std. err. of species discard %		0.5513	0.1352	0.4238	1.0000			1.0000
discarded lb per unit of effort 2	Not observed	1.126	0.100	0.825	0.000	0.000	Not observed	0.000
std. err. of discard lb/effort		0.4931	0.0674	0.3627	0.0001			0.0001
discarded lb per retained sablefish lb		1.448%	0.149%	1.055%	0.007%	0.000%		0.007%
std. err. of discard lb/sablefish lb		0.0064	0.0008	0.0046	0.0001			0.0001

¹ The depths used to partition sets into deep and shallow strata were 100 fm north of 40°10' N. lat., and 150 fm south of 40°10' N. lat.

² The unit of effort is calculated as (set hours) times (number of hooks) divided by 1,000. Thus, the values shown are 1,000 times larger than would result from dividing discarded pounds by [(set hours) times (number of hooks)].

Table 7 (cont.). Three measures of discard, and associated standard errors, for selected species in the limited entry, fixed-gear primary sablefish fishery, by gear, year, and depth strata.

Species Depth strata 1	Hook and line				Pot			
	2001	2002	2003	All years	2001	2002	2003	All years
Cowcod rockfish								
deep								
number of observed sets	80	290	311	681	27	239	279	545
species discard percentage								
std. err. of species discard %								
discarded lb per unit of effort 2	Not observed	Not observed	Not observed	Not observed	Not observed	Not observed	Not observed	Not observed
std. err. of discard lb/effort								
discarded lb per retained sablefish lb								
std. err. of discard lb/sablefish lb								
shallow								
number of observed sets	1	58	11	70	41	2	0	43
species discard percentage								
std. err. of species discard %								
discarded lb per unit of effort 2	Not observed	Not observed	Not observed	Not observed	Not observed	Not observed	Not observed	Not observed
std. err. of discard lb/effort								
discarded lb per retained sablefish lb								
std. err. of discard lb/sablefish lb								
Widow rockfish								
deep								
number of observed sets	80	290	311	681	27	239	279	545
species discard percentage			100.0%	100.0%				
std. err. of species discard %			1.0000	1.0000				
discarded lb per unit of effort 2	Not observed	Not observed	0.002	0.001	Not observed	Not observed	Not observed	Not observed
std. err. of discard lb/effort			0.0017	0.0007				
discarded lb per retained sablefish lb			0.002%	0.001%				
std. err. of discard lb/sablefish lb			0.0000	0.0000				
shallow								
number of observed sets	1	58	11	70	41	2	0	43
species discard percentage		100.0%		100.0%				
std. err. of species discard %		1.0000		1.0000				
discarded lb per unit of effort 2	Not observed	0.012	Not observed	0.008	Not observed	Not observed	Not observed	Not observed
std. err. of discard lb/effort		0.0119		0.0084				
discarded lb per retained sablefish lb		0.015%		0.011%				
std. err. of discard lb/sablefish lb		0.0002		0.0001				

¹ The depths used to partition sets into deep and shallow strata were 100 fm north of 40°10' N. lat., and 150 fm south of 40°10' N. lat.

² The unit of effort is calculated as (set hours) times (number of hooks) divided by 1,000. Thus, the values shown are 1,000 times larger than would result from dividing discarded pounds by [(set hours) times (number of hooks)].

Table 7 (cont.). Three measures of discard, and associated standard errors, for selected species in the limited entry, fixed-gear primary sablefish fishery, by gear, year, and depth strata.

Species Depth strata 1	Hook and line				Pot			
	2001	2002	2003	All years	2001	2002	2003	All years
Yelloweye rockfish								
deep								
number of observed sets	80	290	311	681	27	239	279	545
species discard percentage	0.0%	85.6%	87.5%	85.2%				
std. err. of species discard %		0.2835	0.2161	0.1732				
discarded lb per unit of effort 2	0.000	0.035	0.097	0.053	Not observed	Not observed	Not observed	Not observed
std. err. of discard lb/effort		0.0096	0.0196	0.0087				
discarded lb per retained sablefish lb	0.000%	0.053%	0.130%	0.078%				
std. err. of discard lb/sablefish lb		0.0001	0.0003	0.0001				
shallow								
number of observed sets	1	58	11	70	41	2	0	43
species discard percentage		96.9%	100.0%	97.1%				
std. err. of species discard %		0.4239	0.9889	0.4042				
discarded lb per unit of effort 2	Not observed	1.283	0.351	0.998	Not observed	Not observed	Not observed	Not observed
std. err. of discard lb/effort		0.4340	0.3312	0.3382				
discarded lb per retained sablefish lb		1.650%	0.520%	1.276%				
std. err. of discard lb/sablefish lb		0.0057	0.0048	0.0042				
Darkblotched rockfish								
deep								
number of observed sets	80	290	311	681	27	239	279	545
species discard percentage	0.0%	36.1%	16.1%	21.3%	100.0%	0.0%	0.0%	2.9%
std. err. of species discard %		0.1395	0.0638	0.0641	0.8580			0.0104
discarded lb per unit of effort 2	0.000	0.008	0.008	0.006	0.000	0.000	0.000	0.000
std. err. of discard lb/effort		0.0027	0.0047	0.0022	0.0002			0.0000
discarded lb per retained sablefish lb	0.000%	0.011%	0.010%	0.009%	0.007%	0.000%	0.000%	0.000%
std. err. of discard lb/sablefish lb		0.0000	0.0001	0.0000	0.0000			0.0000
shallow								
number of observed sets	1	58	11	70	41	2	0	43
species discard percentage								
std. err. of species discard %								
discarded lb per unit of effort 2	Not observed	Not observed	Not observed	Not observed	Not observed	Not observed	Not observed	Not observed
std. err. of discard lb/effort								
discarded lb per retained sablefish lb								
std. err. of discard lb/sablefish lb								

¹ The depths used to partition sets into deep and shallow strata were 100 fm north of 40°10' N. lat., and 150 fm south of 40°10' N. lat.

² The unit of effort is calculated as (set hours) times (number of hooks) divided by 1,000. Thus, the values shown are 1,000 times larger than would result from dividing discarded pounds by [(set hours) times (number of hooks)].

Table 7 (cont.). Three measures of discard, and associated standard errors, for selected species in the limited entry, fixed-gear primary sablefish fishery, by gear, year, and depth strata.

Species Depth strata 1	Hook and line				Pot			
	2001	2002	2003	All years	2001	2002	2003	All years
Pacific ocean perch								
deep								
number of observed sets	80	290	311	681	27	239	279	545
species discard percentage		0.0%	12.8%	1.9%		0.0%		0.0%
std. err. of species discard %			0.0698	0.0069				
discarded lb per unit of effort 2	Not observed	0.000	0.001	0.000	Not observed	0.000	Not observed	0.000
std. err. of discard lb/effort			0.0004	0.0002				
discarded lb per retained sablefish lb		0.000%	0.001%	0.000%		0.000%		0.000%
std. err. of discard lb/sablefish lb			0.0000	0.0000				
shallow								
number of observed sets	1	58	11	70	41	2	0	43
species discard percentage		0.0%		0.0%				
std. err. of species discard %								
discarded lb per unit of effort 2	Not observed	0.000	Not observed	0.000	Not observed	Not observed	Not observed	Not observed
std. err. of discard lb/effort				0.000%				
discarded lb per retained sablefish lb		0.000%						
std. err. of discard lb/sablefish lb								
Lingcod								
deep								
number of observed sets	80	290	311	681	27	239	279	545
species discard percentage	100.0%	37.6%	30.0%	33.4%	94.5%	0.0%	79.1%	59.3%
std. err. of species discard %	0.8623	0.0931	0.0557	0.0497	0.3904		0.4749	0.1668
discarded lb per unit of effort 2	0.020	0.097	0.144	0.100	0.169	0.000	0.002	0.011
std. err. of discard lb/effort	0.0138	0.0395	0.0366	0.0211	0.0574		0.0012	0.0036
discarded lb per retained sablefish lb	0.033%	0.146%	0.194%	0.147%	3.953%	0.000%	0.044%	0.203%
std. err. of discard lb/sablefish lb	0.0002	0.0006	0.0005	0.0003	0.0134		0.0002	0.0007
shallow								
number of observed sets	1	58	11	70	41	2	0	43
species discard percentage	0.0%	18.9%	27.0%	21.9%	99.8%	Not observed	Not observed	99.8%
std. err. of species discard %		0.0719	0.1527	0.0724	0.2892			0.2928
discarded lb per unit of effort 2	0.000	0.308	1.045	0.475	0.122			0.120
std. err. of discard lb/effort		0.2429	1.0094	0.3018	0.0295			0.0293
discarded lb per retained sablefish lb	0.000%	0.396%	1.550%	0.608%	6.303%			6.148%
std. err. of discard lb/sablefish lb		0.0031	0.0148	0.0038	0.0169			0.0165

¹ The depths used to partition sets into deep and shallow strata were 100 fm north of 40°10' N. lat., and 150 fm south of 40°10' N. lat.

² The unit of effort is calculated as (set hours) times (number of hooks) divided by 1,000. Thus, the values shown are 1,000 times larger than would result from dividing discarded pounds by [(set hours) times (number of hooks)].

Table 7 (cont.). Three measures of discard, and associated standard errors, for selected species in the limited entry, fixed-gear primary sablefish fishery, by gear, year, and depth strata.

Species Depth strata 1	Hook and line				Pot			
	2001	2002	2003	All years	2001	2002	2003	All years
Sablefish								
deep								
number of observed sets	80	290	311	681	27	239	279	545
species discard percentage	7.7%	16.9%	13.2%	13.6%	2.6%	31.2%	10.9%	18.8%
std. err. of species discard %	0.0049	0.0083	0.0063	0.0043	0.0031	0.0209	0.0050	0.0071
discarded lb per unit of effort 2	4.932	13.461	11.322	10.712	0.113	3.646	0.576	1.265
std. err. of discard lb/effort	0.6919	1.4135	1.3639	0.7766	0.0483	0.4577	0.0605	0.1051
discarded lb per retained sablefish lb	8.351%	20.368%	15.233%	15.749%	2.644%	45.321%	12.218%	23.145%
std. err. of discard lb/sablefish lb	0.0122	0.0211	0.0163	0.0108	0.0113	0.0514	0.0125	0.0183
shallow								
number of observed sets	1	58	11	70	41	2	0	43
species discard percentage	0.0%	20.3%	6.0%	16.2%	7.2%	52.0%	Not observed	9.3%
std. err. of species discard %		0.0475	0.0073	0.0299	0.0117	0.5151		0.0149
discarded lb per unit of effort 2	0.000	19.783	4.296	15.105	0.149	3.378		0.199
std. err. of discard lb/effort		13.3890	2.4319	9.6198	0.0595	3.3784		0.0779
discarded lb per retained sablefish lb	0.000%	25.437%	6.374%	19.328%	7.748%	108.398%		10.231%
std. err. of discard lb/sablefish lb		0.1728	0.0187	0.1224	0.0320	1.0840		0.0414
Pacific hake								
deep								
number of observed sets	80	290	311	681	27	239	279	545
species discard percentage	100.0%	89.3%	100.0%	95.9%	100.0%	Not observed	Not observed	100.0%
std. err. of species discard %	0.5129	0.4718	0.5390	0.3030	1.0000			1.0000
discarded lb per unit of effort 2	0.035	0.020	0.014	0.021	0.000			0.000
std. err. of discard lb/effort	0.0131	0.0087	0.0056	0.0049	0.0003			0.0000
discarded lb per retained sablefish lb	0.059%	0.031%	0.019%	0.030%	0.007%			0.000%
std. err. of discard lb/sablefish lb	0.0002	0.0001	0.0001	0.0001	0.0001			0.0000
shallow								
number of observed sets	1	58	11	70	41	2	0	43
species discard percentage	Not observed	100.0%	Not observed	100.0%	Not observed	Not observed	Not observed	Not observed
std. err. of species discard %		0.6824		0.6848				
discarded lb per unit of effort 2		0.058		0.041				
std. err. of discard lb/effort		0.0305		0.0221				
discarded lb per retained sablefish lb		0.075%		0.053%				
std. err. of discard lb/sablefish lb		0.0004		0.0003				

¹ The depths used to partition sets into deep and shallow strata were 100 fm north of 40°10' N. lat., and 150 fm south of 40°10' N. lat.

² The unit of effort is calculated as (set hours) times (number of hooks) divided by 1,000. Thus, the values shown are 1,000 times larger than would result from dividing discarded pounds by [(set hours) times (number of hooks)].

Table 7 (cont.). Three measures of discard, and associated standard errors, for selected species in the limited entry, fixed-gear primary sablefish fishery, by gear, year, and depth strata.

Species		Hook and line				Pot			
Depth strata 1		2001	2002	2003	All years	2001	2002	2003	All years
Roundfish other than lingcod, sablefish and hake									
deep									
	number of observed sets	80	290	311	681	27	239	279	545
	species discard percentage	100.0%	81.7%	40.8%	64.9%	Not observed	5.5%	77.0%	76.5%
	std. err. of species discard %	0.6158	0.5575	0.0680	0.1789		0.0426	0.1775	0.1797
	discarded lb per unit of effort 2	0.188	0.165	0.109	0.146		0.000	0.035	0.025
	std. err. of discard lb/effort	0.0871	0.1042	0.0252	0.0438		0.0000	0.0072	0.0052
	discarded lb per retained sablefish lb	0.319%	0.250%	0.146%	0.215%		0.001%	0.736%	0.451%
	std. err. of discard lb/sablefish lb	0.0015	0.0016	0.0003	0.0006		0.0000	0.0015	0.0009
shallow									
	number of observed sets	1	58	11	70	41	2	0	43
	species discard percentage	Not observed	2.6%	4.7%	4.2%	Not observed	Not observed	Not observed	Not observed
	std. err. of species discard %		0.0078	0.0188	0.0153				
	discarded lb per unit of effort 2		0.005	0.087	0.025				
	std. err. of discard lb/effort		0.0037	0.0571	0.0119				
	discarded lb per retained sablefish lb		0.006%	0.129%	0.032%				
	std. err. of discard lb/sablefish lb		0.0000	0.0006	0.0002				
Dover sole									
deep									
	number of observed sets	80	290	311	681	27	239	279	545
	species discard percentage	100.0%	97.9%	92.7%	96.7%	75.2%	62.6%	27.3%	45.5%
	std. err. of species discard %	0.8965	0.9529	0.2199	0.8002	0.3764	0.1172	0.0527	0.0603
	discarded lb per unit of effort 2	0.006	0.497	0.131	0.237	0.005	0.022	0.003	0.008
	std. err. of discard lb/effort	0.0044	0.4458	0.0257	0.1625	0.0021	0.0044	0.0010	0.0012
	discarded lb per retained sablefish lb	0.010%	0.751%	0.176%	0.348%	0.109%	0.268%	0.066%	0.138%
	std. err. of discard lb/sablefish lb	0.0001	0.0067	0.0003	0.0024	0.0005	0.0005	0.0002	0.0002
shallow									
	number of observed sets	1	58	11	70	41	2	0	43
	species discard percentage	Not observed	50.0%	Not observed	50.0%	100.0%	Not observed	Not observed	100.0%
	std. err. of species discard %		0.2523		0.2535	0.4705			0.4724
	discarded lb per unit of effort 2		0.014		0.010	0.003			0.003
	std. err. of discard lb/effort		0.0093		0.0067	0.0010			0.0010
	discarded lb per retained sablefish lb		0.019%		0.013%	0.139%			0.136%
	std. err. of discard lb/sablefish lb		0.0001		0.0001	0.0005			0.0005

¹ The depths used to partition sets into deep and shallow strata were 100 fm north of 40°10' N. lat., and 150 fm south of 40°10' N. lat.

² The unit of effort is calculated as (set hours) times (number of hooks) divided by 1,000. Thus, the values shown are 1,000 times larger than would result from dividing discarded pounds by [(set hours) times (number of hooks)].

Table 7 (cont.). Three measures of discard, and associated standard errors, for selected species in the limited entry, fixed-gear primary sablefish fishery, by gear, year, and depth strata.

Species Depth strata 1	Hook and line				Pot			
	2001	2002	2003	All years	2001	2002	2003	All years
Arrowtooth flounder								
deep								
number of observed sets	80	290	311	681	27	239	279	545
species discard percentage	99.7%	64.2%	70.5%	71.3%	100.0%	48.9%	89.6%	80.2%
std. err. of species discard %	0.8730	0.1369	0.1056	0.1201	0.5628	0.1509	0.3570	0.2468
discarded lb per unit of effort 2	1.290	1.797	1.676	1.636	0.005	0.007	0.013	0.011
std. err. of discard lb/effort	0.9303	0.4152	0.2655	0.2755	0.0022	0.0015	0.0041	0.0029
discarded lb per retained sablefish lb	2.184%	2.719%	2.254%	2.405%	0.118%	0.083%	0.266%	0.197%
std. err. of discard lb/sablefish lb	0.0158	0.0063	0.0034	0.0040	0.0005	0.0002	0.0009	0.0005
shallow								
number of observed sets	1	58	11	70	41	2	0	43
species discard percentage	100.0%	67.1%	17.9%	43.5%	100.0%	Not observed	Not observed	100.0%
std. err. of species discard %		0.2298	0.0506	0.1320	0.7855			0.7860
discarded lb per unit of effort 2	11.707	0.927	1.492	1.543	0.002			0.002
std. err. of discard lb/effort		0.2804	1.2329	0.6375	0.0012			0.0012
discarded lb per retained sablefish lb	8.137%	1.193%	2.214%	1.975%	0.097%			0.095%
std. err. of discard lb/sablefish lb		0.0037	0.0168	0.0080	0.0006			0.0006
Petrole sole								
deep								
number of observed sets	80	290	311	681	27	239	279	545
species discard percentage		5.1%	11.1%	6.6%		0.0%		0.0%
std. err. of species discard %		0.0108	0.0269	0.0114				
discarded lb per unit of effort 2	Not observed	0.006	0.004	0.004	Not observed	0.000	Not observed	0.000
std. err. of discard lb/effort		0.0019	0.0016	0.0010				
discarded lb per retained sablefish lb		0.008%	0.005%	0.005%		0.000%		0.000%
std. err. of discard lb/sablefish lb		0.0000	0.0000	0.0000				
shallow								
number of observed sets	1	58	11	70	41	2		43
species discard percentage		2.4%	35.3%	4.0%	100.0%	Not observed	Not observed	100.0%
std. err. of species discard %		0.0069	0.1924	0.0110	1.0000			1.0000
discarded lb per unit of effort 2	Not observed	0.014	0.031	0.018	0.000			0.000
std. err. of discard lb/effort		0.0083	0.0311	0.0098	0.0001			0.0001
discarded lb per retained sablefish lb		0.019%	0.046%	0.023%	0.007%			0.007%
std. err. of discard lb/sablefish lb		0.0001	0.0005	0.0001	0.0001			0.0001

¹ The depths used to partition sets into deep and shallow strata were 100 fm north of 40°10' N. lat., and 150 fm south of 40°10' N. lat.

² The unit of effort is calculated as (set hours) times (number of hooks) divided by 1,000. Thus, the values shown are 1,000 times larger than would result from dividing discarded pounds by [(set hours) times (number of hooks)].

Table 7 (cont.). Three measures of discard, and associated standard errors, for selected species in the limited entry, fixed-gear primary sablefish fishery, by gear, year, and depth strata.

Species Depth strata 1	Hook and line				Pot			
	2001	2002	2003	All years	2001	2002	2003	All years
Other flatfish								
deep								
number of observed sets	80	290	311	681	27	239	279	545
species discard percentage		0.0%		0.0%			0.0%	0.0%
std. err. of species discard %								
discarded lb per unit of effort 2	Not observed	0.000	Not observed	0.000	Not observed	Not observed	0.000	0.000
std. err. of discard lb/effort								
discarded lb per retained sablefish lb		0.000%		0.000%			0.000%	0.000%
std. err. of discard lb/sablefish lb								
shallow								
number of observed sets	1	58	11	70	41	2	0	43
species discard percentage		0.0%		0.0%				
std. err. of species discard %								
discarded lb per unit of effort 2	Not observed	0.000	Not observed	0.000	Not observed	Not observed	Not observed	Not observed
std. err. of discard lb/effort								
discarded lb per retained sablefish lb		0.000%		0.000%				
std. err. of discard lb/sablefish lb								
Longspine thornyhead								
deep								
number of observed sets	80	290	311	681	27	239	279	545
species discard percentage		0.4%		0.4%		32.1%	69.7%	61.5%
std. err. of species discard %		0.0025		0.0025		0.2076	0.3871	0.2839
discarded lb per unit of effort 2	Not observed	0.000	Not observed	0.000	Not observed	0.000	0.000	0.000
std. err. of discard lb/effort		0.0001		0.0000		0.0000	0.0000	0.0000
discarded lb per retained sablefish lb		0.000%		0.000%		0.000%	0.001%	0.001%
std. err. of discard lb/sablefish lb		0.0000		0.0000		0.0000	0.0000	0.0000
shallow								
number of observed sets	1	58	11	70	41	2	0	43
species discard percentage								
std. err. of species discard %								
discarded lb per unit of effort 2	Not observed	Not observed	Not observed	Not observed	Not observed	Not observed	Not observed	Not observed
std. err. of discard lb/effort								
discarded lb per retained sablefish lb								
std. err. of discard lb/sablefish lb								

¹ The depths used to partition sets into deep and shallow strata were 100 fm north of 40°10' N. lat., and 150 fm south of 40°10' N. lat.

² The unit of effort is calculated as (set hours) times (number of hooks) divided by 1,000. Thus, the values shown are 1,000 times larger than would result from dividing discarded pounds by [(set hours) times (number of hooks)].

Table 7 (cont.). Three measures of discard, and associated standard errors, for selected species in the limited entry, fixed-gear primary sablefish fishery, by gear, year, and depth strata.

Species Depth strata 1	Hook and line				Pot			
	2001	2002	2003	All years	2001	2002	2003	All years
Shortspine thornyhead								
deep								
number of observed sets	80	290	311	681	27	239	279	545
species discard percentage	28.1%	4.5%	7.0%	17.3%	100.0%	15.6%	4.5%	6.6%
std. err. of species discard %	0.0829	0.0099	0.0118	0.0298	1.0000	0.0540	0.0136	0.0182
discarded lb per unit of effort 2	0.321	0.014	0.020	0.083	0.001	0.000	0.000	0.000
std. err. of discard lb/effort	0.1287	0.0035	0.0046	0.0288	0.0014	0.0003	0.0002	0.0002
discarded lb per retained sablefish lb	0.544%	0.021%	0.027%	0.123%	0.032%	0.004%	0.008%	0.008%
std. err. of discard lb/sablefish lb	0.0022	0.0001	0.0001	0.0004	0.0003	0.0000	0.0000	0.0000
shallow								
number of observed sets	1	58	11	70	41	2	0	43
species discard percentage			27.8%	27.8%				
std. err. of species discard %			0.2785	0.2785				
discarded lb per unit of effort 2	Not observed	Not observed	0.009	0.002	Not observed	Not observed	Not observed	Not observed
std. err. of discard lb/effort			0.0094	0.0023				
discarded lb per retained sablefish lb			0.014%	0.003%				
std. err. of discard lb/sablefish lb			0.0001	0.0000				
Mixed thornyheads								
deep								
number of observed sets	80	290	311	681	27	239	279	545
species discard percentage	28.7%	6.2%	2.7%	22.8%				
std. err. of species discard %	0.1764	0.0530	0.0076	0.1136				
discarded lb per unit of effort 2	0.062	0.002	0.000	0.014	Not observed	Not observed	Not observed	Not observed
std. err. of discard lb/effort	0.0623	0.0012	0.0003	0.0135				
discarded lb per retained sablefish lb	0.105%	0.003%	0.000%	0.021%				
std. err. of discard lb/sablefish lb	0.0011	0.0000	0.0000	0.0002				
shallow								
number of observed sets	1	58	11	70	41	2	0	43
species discard percentage								
std. err. of species discard %								
discarded lb per unit of effort 2	Not observed	Not observed	Not observed	Not observed	Not observed	Not observed	Not observed	Not observed
std. err. of discard lb/effort								
discarded lb per retained sablefish lb								
std. err. of discard lb/sablefish lb								

¹ The depths used to partition sets into deep and shallow strata were 100 fm north of 40°10' N. lat., and 150 fm south of 40°10' N. lat.

² The unit of effort is calculated as (set hours) times (number of hooks) divided by 1,000. Thus, the values shown are 1,000 times larger than would result from dividing discarded pounds by [(set hours) times (number of hooks)].

Table 7 (cont.). Three measures of discard, and associated standard errors, for selected species in the limited entry, fixed-gear primary sablefish fishery, by gear, year, and depth strata.

Species Depth strata 1	Hook and line				Pot			
	2001	2002	2003	All years	2001	2002	2003	All years
Yellowtail rockfish								
deep								
number of observed sets	80	290	311	681	27	239	279	545
species discard percentage		33.4%	13.4%	21.5%				
std. err. of species discard %		0.1755	0.0298	0.0544				
discarded lb per unit of effort 2	Not observed	0.016	0.008	0.009	Not observed	Not observed	Not observed	Not observed
std. err. of discard lb/effort		0.0102	0.0042	0.0041				
discarded lb per retained sablefish lb		0.024%	0.011%	0.013%				
std. err. of discard lb/sablefish lb		0.0002	0.0001	0.0001				
shallow								
number of observed sets	1	58	11	70	41	2	0	43
species discard percentage		13.5%	0.0%	8.2%				
std. err. of species discard %		0.0663		0.0400				
discarded lb per unit of effort 2	Not observed	0.005	0.000	0.004	Not observed	Not observed	Not observed	Not observed
std. err. of discard lb/effort		0.0053		0.0038				
discarded lb per retained sablefish lb		0.007%	0.000%	0.005%				
std. err. of discard lb/sablefish lb		0.0001		0.0000				
Shelf rockfish other than those listed individually								
deep								
number of observed sets	80	290	311	681	27	239	279	545
species discard percentage	48.0%	57.2%	32.9%	39.9%	64.4%	0.0%	0.0%	4.3%
std. err. of species discard %	0.2773	0.1141	0.0466	0.0466	0.3762			0.0101
discarded lb per unit of effort 2	0.006	0.092	0.118	0.084	0.001	0.000	0.000	0.000
std. err. of discard lb/effort	0.0024	0.0177	0.0247	0.0120	0.0004			0.0000
discarded lb per retained sablefish lb	0.010%	0.140%	0.159%	0.124%	0.017%	0.000%	0.000%	0.001%
std. err. of discard lb/sablefish lb	0.0000	0.0003	0.0003	0.0002	0.0001			0.0000
shallow								
number of observed sets	1	58	11	70	41	2	0	43
species discard percentage		54.7%	17.9%	50.1%	100.0%			100.0%
std. err. of species discard %		0.1428	0.0307	0.1155	0.9576			0.9577
discarded lb per unit of effort 2	Not observed	1.089	0.149	0.810	0.000	Not observed	Not observed	0.000
std. err. of discard lb/effort		0.3223	0.0991	0.2490	0.0001			0.0001
discarded lb per retained sablefish lb		1.400%	0.221%	1.036%	0.009%			0.009%
std. err. of discard lb/sablefish lb		0.0043	0.0011	0.0031	0.0001			0.0001

¹ The depths used to partition sets into deep and shallow strata were 100 fm north of 40°10' N. lat., and 150 fm south of 40°10' N. lat.

² The unit of effort is calculated as (set hours) times (number of hooks) divided by 1,000. Thus, the values shown are 1,000 times larger than would result from dividing discarded pounds by [(set hours) times (number of hooks)].

Table 7 (cont.). Three measures of discard, and associated standard errors, for selected species in the limited entry, fixed-gear primary sablefish fishery, by gear, year, and depth strata.

Species Depth strata 1	Hook and line				Pot			
	2001	2002	2003	All years	2001	2002	2003	All years
Slope rockfish other than darkblotched and POP								
deep								
number of observed sets	80	290	311	681	27	239	279	545
species discard percentage	2.6%	14.6%	11.9%	12.3%	53.4%	1.3%	0.0%	1.8%
std. err. of species discard %	0.0089	0.0231	0.0162	0.0125	0.3005	0.0033		0.0028
discarded lb per unit of effort 2	0.010	0.209	0.309	0.208	0.004	0.000	0.000	0.000
std. err. of discard lb/effort	0.0091	0.0726	0.0852	0.0441	0.0020	0.0002		0.0001
discarded lb per retained sablefish lb	0.018%	0.317%	0.416%	0.306%	0.091%	0.004%	0.000%	0.006%
std. err. of discard lb/sablefish lb	0.0002	0.0011	0.0011	0.0006	0.0005	0.0000		0.0000
shallow								
number of observed sets	1	58	11	70	41	2	0	43
species discard percentage		100.0%	1.9%	20.5%	100.0%			100.0%
std. err. of species discard %		0.9950	0.0106	0.1093	0.7544			0.7550
discarded lb per unit of effort 2	Not observed	0.115	0.028	0.089	0.002	Not observed	Not observed	0.002
std. err. of discard lb/effort		0.1094	0.0276	0.0781	0.0015			0.0014
discarded lb per retained sablefish lb		0.148%	0.041%	0.113%	0.127%			0.124%
std. err. of discard lb/sablefish lb		0.0014	0.0004	0.0010	0.0008			0.0007
Black rockfish								
deep								
number of observed sets	80	290	311	681	27	239	279	545
species discard percentage		0.0%		0.0%				
std. err. of species discard %								
discarded lb per unit of effort 2	Not observed	0.000	Not observed	0.000	Not observed	Not observed	Not observed	Not observed
std. err. of discard lb/effort								
discarded lb per retained sablefish lb		0.000%		0.000%				
std. err. of discard lb/sablefish lb								
shallow								
number of observed sets	1	58	11	70	41	2	0	43
species discard percentage								
std. err. of species discard %								
discarded lb per unit of effort 2	Not observed	Not observed	Not observed	Not observed	Not observed	Not observed	Not observed	Not observed
std. err. of discard lb/effort								
discarded lb per retained sablefish lb								
std. err. of discard lb/sablefish lb								

¹ The depths used to partition sets into deep and shallow strata were 100 fm north of 40°10' N. lat., and 150 fm south of 40°10' N. lat.

² The unit of effort is calculated as (set hours) times (number of hooks) divided by 1,000. Thus, the values shown are 1,000 times larger than would result from dividing discarded pounds by [(set hours) times (number of hooks)].

Table 7 (cont.). Three measures of discard, and associated standard errors, for selected species in the limited entry, fixed-gear primary sablefish fishery, by gear, year, and depth strata.

Species Depth strata 1	Hook and line				Pot			
	2001	2002	2003	All years	2001	2002	2003	All years
Nearshore rockfish other than black								
deep								
number of observed sets	80	290	311	681	27	239	279	545
species discard percentage		0.0%		0.0%				
std. err. of species discard %								
discarded lb per unit of effort 2	Not observed	0.000	Not observed	0.000	Not observed	Not observed	Not observed	Not observed
std. err. of discard lb/effort								
discarded lb per retained sablefish lb		0.000%		0.000%				
std. err. of discard lb/sablefish lb								
shallow								
number of observed sets	1	58	11	70	41	2	0	43
species discard percentage								
std. err. of species discard %								
discarded lb per unit of effort 2	Not observed	Not observed	Not observed	Not observed	Not observed	Not observed	Not observed	Not observed
std. err. of discard lb/effort								
discarded lb per retained sablefish lb								
std. err. of discard lb/sablefish lb								
California halibut								
deep								
number of observed sets	80	290	311	681	27	239	279	545
species discard percentage								
std. err. of species discard %								
discarded lb per unit of effort 2	Not observed	Not observed	Not observed	Not observed	Not observed	Not observed	Not observed	Not observed
std. err. of discard lb/effort								
discarded lb per retained sablefish lb								
std. err. of discard lb/sablefish lb								
shallow								
number of observed sets	1	58	11	70	41	2	0	43
species discard percentage								
std. err. of species discard %								
discarded lb per unit of effort 2	Not observed	Not observed	Not observed	Not observed	Not observed	Not observed	Not observed	Not observed
std. err. of discard lb/effort								
discarded lb per retained sablefish lb								
std. err. of discard lb/sablefish lb								

¹ The depths used to partition sets into deep and shallow strata were 100 fm north of 40°10' N. lat., and 150 fm south of 40°10' N. lat.

² The unit of effort is calculated as (set hours) times (number of hooks) divided by 1,000. Thus, the values shown are 1,000 times larger than would result from dividing discarded pounds by [(set hours) times (number of hooks)].

Table 7 (cont.). Three measures of discard, and associated standard errors, for selected species in the limited entry, fixed-gear primary sablefish fishery, by gear, year, and depth strata.

Species Depth strata 1	Hook and line				Pot			
	2001	2002	2003	All years	2001	2002	2003	All years
Pacific halibut								
deep								
number of observed sets	80	290	311	681	27	239	279	545
species discard percentage	90.9%	82.5%	84.1%	84.1%	100.0%	100.0%	100.0%	100.0%
std. err. of species discard %	0.3174	0.1452	0.1139	0.0872	0.7069	0.6369	0.7040	0.4970
discarded lb per unit of effort 2	4.747	10.694	16.729	11.931	0.138	0.097	0.003	0.032
std. err. of discard lb/effort	1.3277	1.6375	2.2131	1.1060	0.0759	0.0469	0.0014	0.0118
discarded lb per retained sablefish lb	8.038%	16.180%	22.508%	17.542%	3.214%	1.201%	0.054%	0.588%
std. err. of discard lb/sablefish lb	0.0227	0.0246	0.0271	0.0157	0.0177	0.0058	0.0003	0.0021
shallow								
number of observed sets	1	58	11	70	41	2	0	43
species discard percentage	89.8%	75.5%	81.2%	76.8%	100.0%	100.0%	Not observed	100.0%
std. err. of species discard %		0.2163	0.2849	0.1867	0.7017	1.0000		0.6874
discarded lb per unit of effort 2	20.612	22.872	12.130	20.136	0.108	0.176		0.109
std. err. of discard lb/effort		6.0704	7.0953	5.0890	0.0592	0.1757		0.0584
discarded lb per retained sablefish lb	14.327%	29.410%	17.998%	25.765%	5.609%	5.639%		5.610%
std. err. of discard lb/sablefish lb		0.0812	0.0610	0.0611	0.0312	0.0564		0.0305
Salmon								
deep								
number of observed sets	80	290	311	681	27	239	279	545
species discard percentage			100.0%	100.0%				
std. err. of species discard %			1.0000	1.0000				
discarded lb per unit of effort 2	Not observed	Not observed	0.001	0.001	Not observed	Not observed	Not observed	Not observed
std. err. of discard lb/effort			0.0014	0.0006				
discarded lb per retained sablefish lb			0.002%	0.001%				
std. err. of discard lb/sablefish lb			0.0000	0.0000				
shallow								
number of observed sets	1	58	11	70	41	2	0	43
species discard percentage								
std. err. of species discard %								
discarded lb per unit of effort 2	Not observed	Not observed	Not observed	Not observed	Not observed	Not observed	Not observed	Not observed
std. err. of discard lb/effort								
discarded lb per retained sablefish lb								
std. err. of discard lb/sablefish lb								

¹ The depths used to partition sets into deep and shallow strata were 100 fm north of 40°10' N. lat., and 150 fm south of 40°10' N. lat.

² The unit of effort is calculated as (set hours) times (number of hooks) divided by 1,000. Thus, the values shown are 1,000 times larger than would result from dividing discarded pounds by [(set hours) times (number of hooks)].

Table 8a. Comparison of sablefish discard and bycatch of overfished species among depth strata, using only sets that were designated as sablefish target sets from all years, for both gear types.

	Depth category of set						
	0-100 fm	100-125 fm	125-150 fm	>150 fm	>125 fm	>100 fm	All depths
Number of sets observed	155	221	142	811	953	1,174	1,329
Sablefish catch (lb)	159,465	279,651	199,378	1,187,915	1,387,293	1,666,944	1,826,410
retained (lb)	138,960	254,222	180,436	971,497	1,151,933	1,406,155	1,545,115
discard / catch	12.9%	9.1%	9.5%	18.2%	17.0%	15.6%	15.4%
Lingcod catch (lb)	4,331	2,415	1,240	1,273	2,514	4,929	9,260
bycatch ratio ¹	3.117%	0.950%	0.687%	0.131%	0.218%	0.351%	0.599%
Widow rockfish catch (lb)	7	10	0	0	0	10	18
bycatch ratio ¹	0.005%	0.004%	0.000%	0.000%	0.000%	0.001%	0.001%
Canary rockfish catch (lb)	855	231	173	22	195	426	1,280
bycatch ratio ¹	0.615%	0.091%	0.096%	0.002%	0.017%	0.030%	0.083%
Yelloweye rockfish catch (lb)	615	420	247	166	413	833	1,448
bycatch ratio ¹	0.443%	0.165%	0.137%	0.017%	0.036%	0.059%	0.094%
Bocaccio rockfish catch (lb)	0	0	0	0	0	0	0
bycatch ratio ¹	0.000%	0.000%	0.000%	0.000%	0.000%	0.000%	0.000%
Cowcod rockfish catch (lb)	0	0	0	0	0	0	0
bycatch ratio ¹	0.000%	0.000%	0.000%	0.000%	0.000%	0.000%	0.000%
Pacific ocean perch catch (lb)	6	12	36	141	178	189	195
bycatch ratio ¹	0.004%	0.005%	0.020%	0.015%	0.015%	0.013%	0.013%
Darkblotched rockfish catch (lb)	1	16	34	389	422	438	439
bycatch ratio ¹	0.000%	0.006%	0.019%	0.040%	0.037%	0.031%	0.028%

¹ The bycatch ratios are calculated by dividing the total catch of each species by the retained poundage of sablefish

Table 8b. Comparison of sablefish discard and bycatch of overfished species among depth strata, using only sets that were designated as sablefish target sets from all years, for **longline** gear.

	Depth category of set						
	0-100 fm	100-125 fm	125-150 fm	>150 fm	>125 fm	>100 fm	All depths
Number of sets observed	105	192	125	318	443	635	740
Sablefish catch (lb)	126,187	255,858	188,494	617,359	805,853	1,061,712	1,187,899
retained (lb)	108,240	235,191	171,574	509,086	680,660	915,851	1,024,091
discard / catch	14.2%	8.1%	9.0%	17.5%	15.5%	13.7%	13.8%
Lingcod catch (lb)	2,320	1,753	1,101	902	2,003	3,756	6,076
bycatch ratio ¹	2.144%	0.745%	0.642%	0.177%	0.294%	0.410%	0.593%
Widow rockfish catch (lb)	7	10	0	0	0	10	18
bycatch ratio ¹	0.007%	0.004%	0.000%	0.000%	0.000%	0.001%	0.002%
Canary rockfish catch (lb)	853	231	173	22	195	426	1,279
bycatch ratio ¹	0.788%	0.098%	0.101%	0.004%	0.029%	0.046%	0.125%
Yelloweye rockfish catch (lb)	615	418	247	166	413	831	1,446
bycatch ratio ¹	0.568%	0.178%	0.144%	0.033%	0.061%	0.091%	0.141%
Bocaccio rockfish catch (lb)	0	0	0	0	0	0	0
bycatch ratio ¹	0.000%	0.000%	0.000%	0.000%	0.000%	0.000%	0.000%
Cowcod rockfish catch (lb)	0	0	0	0	0	0	0
bycatch ratio ¹	0.000%	0.000%	0.000%	0.000%	0.000%	0.000%	0.000%
Pacific ocean perch catch (lb)	6	12	34	141	175	187	193
bycatch ratio ¹	0.005%	0.005%	0.020%	0.028%	0.026%	0.020%	0.019%
Darkblotched rockfish catch (lb)	0	15	34	340	374	389	389
bycatch ratio ¹	0.000%	0.006%	0.020%	0.067%	0.055%	0.042%	0.038%

¹ The bycatch ratios are calculated by dividing the total catch of each species by the retained poundage of sablefish

Table 8c. Comparison of sablefish discard and bycatch of overfished species among depth strata, using only sets that were designated as sablefish target sets from all years, for **pot** gear.

	Depth category of set						
	0-100 fm	100-125 fm	125-150 fm	>150 fm	>125 fm	>100 fm	All depths
Number of sets observed	50	29	17	493	510	539	589
Sablefish catch (lb)	33,278	23,793	10,884	570,556	581,440	605,233	638,511
retained (lb)	30,720	19,031	8,862	462,412	471,273	490,304	521,024
discard / catch	7.7%	20.0%	18.6%	19.0%	18.9%	19.0%	18.4%
Lingcod catch (lb)	2,011	662	139	372	511	1,173	3,184
bycatch ratio ¹	6.546%	3.481%	1.568%	0.080%	0.108%	0.239%	0.611%
Widow rockfish catch (lb)	0	0	0	0	0	0	0
bycatch ratio ¹	0.000%	0.000%	0.000%	0.000%	0.000%	0.000%	0.000%
Canary rockfish catch (lb)	2	0	0	0	0	0	2
bycatch ratio ¹	0.006%	0.000%	0.000%	0.000%	0.000%	0.000%	0.000%
Yelloweye rockfish catch (lb)	0	2	0	0	0	2	2
bycatch ratio ¹	0.000%	0.011%	0.000%	0.000%	0.000%	0.000%	0.000%
Bocaccio rockfish catch (lb)	0	0	0	0	0	0	0
bycatch ratio ¹	0.000%	0.000%	0.000%	0.000%	0.000%	0.000%	0.000%
Cowcod rockfish catch (lb)	0	0	0	0	0	0	0
bycatch ratio ¹	0.000%	0.000%	0.000%	0.000%	0.000%	0.000%	0.000%
Pacific ocean perch catch (lb)	0	0	2	0	2	2	2
bycatch ratio ¹	0.000%	0.000%	0.023%	0.000%	0.000%	0.000%	0.000%
Darkblotched rockfish catch (lb)	1	1	0	49	49	50	50
bycatch ratio ¹	0.002%	0.004%	0.000%	0.011%	0.010%	0.010%	0.010%

¹ The bycatch ratios are calculated by dividing the total catch of each species by the retained poundage of sablefish